The Mother's Year Book

Marion Foster Washburne

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THE MOTHER'S YEAR-BOOK

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THE

MOTHER'S YEAR-BOOK

BEING A

PRACTICAL APPLICATION OF THE RESULTS
OF SCIENTIFIC CHILD-STUDY TO THE
PROBLEMS OF THE FIRST YEAR
OF CHILDHOOD

BY

MARION FOSTER WASHBURNE

AUTHOR OF "FAMILY SECRETS," ETC.

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To

MY MOTHER

Whose love and tender wisdom have followed me
not only through the first years of my life
but even through my adult years; and,
growing as I grew, have extended
themselves to my children

CONTENTS

CHAPTER		PAGE
I.	JANUARY	
	The New-born Baby	1
II.	FEBRUARY	
	One Month Old	23
III.	MARCH	
	Two Months Old	41
IV.	APRIL	
	Three Months Old	59
V.	MAY	
	Four Months Old	86
VI.	JUNE	
	Five Months Old	101
VII.	JULY	
	Six Months Old	118
VIII.	AUGUST	
	Seven Months Old	136
IX.	SEPTEMBER	
	Eight Months Old	151
X.	OCTOBER	
	Nine Months Old	164

CHAPTER

PAGE

XI. NOVEMBER

Ten Months Old 184

XII. DECEMBER

One Year Old 210

XIII. SUMMARY OF THE YEAR'S ACCOMPLISHMENTS . 230

APPENDIX

Care of the Eyes of the New-born . . 249

INDEX 255

THE MOTHER'S YEAR-BOOK

CHAPTER I

JANUARY

The New-born Baby

In all the range of human experience there is nothing more transforming in its effect upon all those who are near at hand than the advent of a little baby — especially the first one. Yet, to unanointed eyes, what is he? Just a little red, squirming thing, with eyes shut for the most part, with tight-clenched fists, with a toothless, sucking mouth, a hairless head, much too large for his body, — an impudent little thing who makes the whole adult household stand around, and imposes his own laws upon every one, regardless of their preferences; a frail little thing, who has to be handled in ways so mysterious that the uninitiated flee from the attempt; and

only one of millions and millions of others, just like himself!

This to the unanointed. To the mother whose eyes have received the chrism from mighty Nature, he is one of the immortals, laid in her all-unworthy arms. She knows herself a responsible human being, with one of God's children lent to her — a child for whose body, mind, and soul she is to render an account.

PREPARATION

Such a stupendous event requires full preparation. Yet it sometimes happens that young mothers do not make anything like a sufficient preparation — largely because, being inexperienced, they do not know what is required. I know of one case in which the doctor was obliged to tear up new linen tablecloths and new blankets to get the necessary supplies for the care of the baby and its young mother. Always after that, one of the first things that he did when engaged to officiate on such an occasion was to inquire if there was plenty of

old linen, cotton, and flannel in the house. When a nurse was also engaged, he would send her over, a month or two before the date on which the baby was expected, and have her make out, with the mother, a complete list of what was required. The list always included quantities of old, well-washed cotton and linen cloths, and squares of soft old flannel.

BABY BASKET

The baby basket should contain the following list of articles — none of them difficult or expensive to provide, and all of them necessary:—

A box of talcum powder.

A bottle of boracic acid solution, 1 to 1000.

A jar of vaseline.

A jar of lard — about half a pound. Or a flask of olive oil.

A box of fine, pure soap.

Three papers of safety pins, — medium, small, and large.

Small squares of linen (old handkerchiefs) to serve as wash-cloths.

Larger squares to serve as towels.

Two large pieces (one yard square) of old flannel, one in which to receive the new-born baby, and one for the lap, when he is bathed.

A bath thermometer.

A complete set of the first clothes he is to wear.

A spool of heavy white embroidery silk — or a skein — for tying the navel.

A pair of sharp scissors for cutting the cord.

The silk and scissors for the navel are usually carried by the physician, but it is well to have them on hand in case of an emergency.

The use of all these things will appear later on when we describe the bathing and dressing of the baby.

THE LAYETTE

As for baby clothes, here is a list that will be found sufficient if the method of dressing presently to be outlined is followed. Of course, more may be added to it, if desired, but nothing can well be taken from it, and yet leave a list sufficient for the requirements of the baby.

Dresses	6
Stockinet under-garments	3
Flannel skirts	3
Nightgowns (flannel or flannelette)	3
Double-gowns	2
Knit shirts, for wear at night	3

Diapers	5 dozen
Long woolen stockings	3 pairs
Knit shawls or flannel squares	2

Cloak, hood, mittens, veil (the veil not white).

Two or three of these items may require a word of explanation: You will notice that only three under-garments are mentioned. That is because they are not worn at night; and three permit a change twice a week, which is often enough for ordinary purposes. Since the long, fine, woolen stockings are expensive, three pairs will do. They may be easily washed out by hand, in case more changes are required. There are no white skirts, because they are really a useless luxury, adding to the laundry work, and detracting from the soft, cuddly feel of the baby, without adding anything to his charms.

The little shirts for night wear are the cheap machine-knit ones, that go over the head. Of course, the baby should never wear at night the clothes he wears in the daytime. The little short shirt is less likely to get wet while the baby lies on his back in bed. A good plan

for keeping the little shirt dry — for its lower edge often gets wet, otherwise, and is likely to give its wearer colic — is to wrap a thick napkin around the child's body, up to his armpits, under the shirt. It also serves to hold the shirt down, and is easily changed.

NAPKINS

The large quantity of napkins mentioned in the list is none too large. That is the one place where no one should economize. They may be made of old table napkins, sewed together and quilted by the machine; or of old tablecloths, treated in the same way; or of cheap, sleazy cotton flannel — the cheaper and sleazier the better. But they should be at least a yard square, and so abundant that there is no danger of one of them ever being used twice, without a washing. They should be frequently changed, and washed out at once. No baby should be permitted to wait, in cold and damp and discomfort, for the leisure of mother or nurse; but should be attended to *instantly*.

There is some foolish superstition about a baby's never taking cold in its own wet, but that is, of course, not even a little bit true. It is worse to leave a baby with wet napkins on, around its middle, than to leave it in a wet dress, or to leave yourself in wet stockings — because not only is the damp where it does the most harm, but it is unclean and excoriating.

NIGHT CARE

Of course, these rules apply to the night as well as the day. It is troublesome to change a baby at night; but not half so troublesome, after all, as to have a chafed and fretful and colicky baby. No one has ever counted the cases of colic that come from this careless habit of leaving babies for hours swathed in wet bandages, but it stands to reason that there must be many thousands. And who would not rather change a baby a dozen times a night, if necessary — only it never is! — than to spend one night watching the poor little thing writhing in the agonies of colic?

BIRTH

"The entrance of the human being into life," says Perez, "is almost as painful as his exit from it." Not only is the labor of birth almost as exhausting to the new-born child, with his slight powers of endurance, as to the mother, but the conditions which he meets are in violent contrast with those to which he has been accustomed. He must now do his own breathing and his own digesting — functions hitherto performed for him by the mother organism. All of his organs have to enter upon new relationships, necessitated by these two great changes.

Furthermore, he is cold. Before birth, he lived in a constant temperature of 98.6°. The warmest room that first receives him is not likely to be more than eighty — indeed, ought not to be, for the sake of the mother. A drop thus of eighteen degrees is a terrible change for his thin, sensitive skin.

He should, then, be wrapped immediately in a large piece of thoroughly warmed flannel which

has been kept toasting before the fire, awaiting his coming. Even in summer there should be some sort of a fire in the room in which he is to be washed and dressed, even though it be only an oil stove. All his clothes and napkins and towels should be there warming at least an hour before he needs them.

FIRST BATH *

Before being bathed he should be oiled all over. It is for this that the basket contains the jar of lard, or flask of olive oil. If he has much hair, that will need special attention. Wipe the oil off quickly with the squares of old linen in the basket. Of course, you will expose him to the air as little as possible during this operation. Let him lie on your knees before the fire in his warm flannel, and uncover only a little bit of him at a time.

Then dip him swiftly into the warm water of the bath. Test it with your bath-thermometer, and see that it is just about 100° — a trifle above

* See Appendix: "Care of the Eyes of the New-Born."

the temperature to which he has been accustomed. This bath is not really necessary, for the oil cleans the little body perfectly; and some physicians object to it as a needless exposure and fatigue. In case the child is very weak, therefore, or the labor has been unusually prolonged, the bath had better be omitted for a day or two. Otherwise, it may be given to please the daintiness of the mother, who naturally desires to see her baby as fresh and sweet as a little flower.

As soon as the child has been bathed — and if he stops crying and stretches out his little legs and seems to enjoy the warmth and freedom, he may be suffered to remain in the tub for a couple of minutes — he should be lifted out and received immediately into a toasting warm towel. I have yet to see the baby cry upon leaving the bath if, before he fairly got his mouth puckered, he found himself pleasantly enveloped in a big warm towel. Have your lap covered, under the towel, with a piece of flannel equally large and warm. Roll the baby up in this and pat and cuddle him until he is dry.

FIRST CLOTHING

Now to dress him: First anoint the cord with vaseline from your basket, then put over it a circle of old linen with a hole cut in the middle. The stump of the cord is put through this, and is thus prevented from coming in contact with the skin of the abdomen. This is all the navel dressing required. Anything more is harmful. Draw the knit band — warm, of course — over the legs and pin it if necessary, but not too tightly. Its whole object is to keep the navel dressing in place. The warm and powdered diaper goes on next, and the band is pinned to it. The little woolen stockings are gathered in the hand and slipped swiftly on — all before the upper part of the body is uncovered. The shirt comes next — warm, remember; and then the flannel gown, and the warm shawl. If each garment is thoroughly warm, the baby will not cry so desperately, for mixed with his discomfort will be recurring sensations of comfort. Warmth is the one great luxury and essential of the brand-

new baby. He does not even need food so much as he does warmth for the first few days.

CONDITION AT BIRTH

"A spinal animal" is what Virchow, the great physiologist, calls the new baby. That is because some of the higher brain centers do not yet exist at all; while those that do exist are in an incomplete state, and the child relies mainly for his life activities upon the proper functions of the spinal cord. He ought to be treated, therefore, almost like a little sprouting plant, and kept at first in darkness, warmth, and silence.

The average weight for a boy, at birth, is seven pounds; for a girl, six and a half pounds. The head is larger in proportion to the body than it ever will be again; the nose is far from finished; the legs are short, and naturally bowed, with a tendency to curl up upon the abdomen — to recur to the ante-natal attitude. This attitude is said to favor the growth of the cartilages at the joints, and should therefore be encouraged. The baby's legs will straighten out without any urging when the right time comes.

The plates of the skull are not complete, nor do they fit together at the edges — a fact that makes possible the molding of the head often necessary to delivery. As a consequence, new babies often have grotesquely misshapen heads — sometimes they are drawn out till they look like a banana, but no one need worry about it; they will grow to a right shape in time, if the baby is well fed.

EYES AND EARS

The ear is unfinished — not so that it shows, but on the inside, where the delicate bones are; and the eyes are also unfinished. That is one reason for the darkness and silence I have just enjoined. These unfinished organs must not be called upon for work. It is a question yet to be settled — though it fills every young mother with indignation to think of it! — whether the new-born baby is deaf and blind or not. At any rate, he speedily acquires a sensitiveness to both lights and sounds, although it is three years before he can interpret at all accurately what he sees and hears.

But there are some things he certainly can do from the start: he can cry, suck, sneeze, cough, kick, and hold on to a finger.

GRASP

The grasp of this tiny hand has a remarkable power. Dr. Louis Robinson made a number of experiments with the babies in a big New York hospital, and found that the little things could actually sustain their whole weight by the arms alone, when their hands were clasped about a slender rod. Of course they grasped the rod at once — a new baby grasps involuntarily anything that touches his hand — and clung to it while he lifted them clear of the bed. They maintained the hold for about half a minute. The power diminishes very quickly after birth; when the baby is five hours old it already begins to wane.

CRIES

Even when a baby is well provided for in every respect, well fed, and well cared for, he still will cry occasionally. It is his only lan-

guage, the only means he has of expressing the thousand strange discomforts that beset him. For the most part, we know how to meet his most obvious wants merely — the want of sleep, of food, of rest. When to us, as adults, these needs are supplied, there remain many others absolutely essential to our happiness. The baby, being an adult in the vague, has these same wants in the vague. We must not too hastily assume that he is a mere little animal, of the lower order, because, after all, within him are the possibilities of a most complex organism — all live possibilities, in a state of growth. The child needs spiritual as well as physical nourishment, and he will often cry when put in the arms of an uncongenial stranger before he has learned to know his own mother; his intuitions seem to develop before his power of intellectual recognition. A baby's crying is a complex thing, the expression of a developing complex personality.

UNPLEASANT FEELINGS

Moreover, we have the word of so careful an observer as Preyer that in the first half year of life, unpleasant feelings are more frequent than afterward. He proceeds to enumerate the many causes which give rise to uncomfortable sensations in young children. Among them he mentions inconvenient positions in lying or being held, and unpleasant feelings of cold or wet.

All these sensations together afflict the new baby who is laid, for example, upon a flat bed by himself, and left to go to sleep as he may. He is unable to turn himself, or to escape his own discomforts. He can only cry. And then the nurse solemnly assures the mother that it is her duty to disregard this feeble and entirely justifiable protest!

SIGNIFICANCE OF CRIES

The directions usually run something in this wise: "Make sure that there is nothing the matter with the child; that he has been fed at the proper time, that no pins are pricking him,

that the clothes are smooth under him. Then let him cry." If the baby were the simple mechanism that this implies, there might be some sense in such a suggestion. But one thing is always true: No little *new baby* ever cried for the pleasure of it, or to bring about any desired result, or for any other reason than as an expression of discomfort. The state of development wherein he can reason that if he cries he will get attention, has not yet arrived.

WARMTH OF CRADLE

He cries simply and solely because he feels like it, and he feels like it because something has gone wrong. Nor can we immediately discover what that something is. What adult, reasoning from adult experience only, can guess that it is a hardship to a baby to lie flat? Yet it is. And it is also a real hardship to him to lie cold. And he will lie cold in spite of all the downy and woolen wraps that can be piled on him, if no heat other than his own be supplied him. Herbert Spencer points out that "To make up

for that cooling by radiation which the body is constantly undergoing, there must be a constant oxidation of certain matters which form part of the food. And in proportion as the thermal loss is great, must the quantity of these matters required for oxidation be great. But the power of the digestive organs is limited. Hence it follows that when they have to prepare a large quantity of this material needful for maintaining the temperature, they can prepare but a small quantity of the material that goes to build up the frame. Excessive expenditure for fuel entails diminished means for other purposes; wherefore there necessarily results a body small in size or inferior in texture, or both."

CRADLE OR HAMMOCK

To preserve the natural conditions, then, let us put the baby in a warm cradle with a rounded surface, or better yet, in a baby hammock. Not only should the cradle covers be warm, but there should be a hot-water bottle or two tucked in with the baby — not near him, but so that they

will keep the clothes warm. If a hammock is used, that should also be warmed. A soft pillow should be laid in it, covered with a thick little pad of cheesecloth — not with rubber — and the baby put on that and snugly tucked in. A down comforter is warm and light. If it is used it should be held down on either side by hot-water bottles, the warmth of which will then come through the down, agreeably modified.

The cradle should be curved as well as warmed, and capable of swinging. The habit of being swung to sleep is, after all, very innocent — much less harmful to a child than the habit of crying himself to sleep, or going to sleep uncomfortable and lonely. The swing of the cradle or hammock is useful in quieting the baby's nerves when they have been overstrained by too much excitement, or by a deferring of the nap-time beyond its usual hour. And when he is restless, too, the swing of the cradle or hammock equalizes the circulation, and prevents the discomfort, familiar to adults, of trying to

go to sleep when there is no such thing as a comfortable position to be had. The hammock or cradle gently tosses the little body from side to side, giving it a rhythmical massage very soothing and helpful. Personally, I prefer the hammock to the cradle, because its long swing is without jar, and one push of the hand will keep it going a long time. It is the device of a people who live near to nature, and who seem to have imitated the nests of birds as nearly as possible. If baby cannot swing in the branches of a tree, it is next best to swing over mother's bed, to the sound of her quiet singing.

PUTTING THE BABY TO SLEEP

What! Sing the baby to sleep? Yes, indeed, and pat him, and rub his little back, if necessary, and, in general, make him as comfortable and happy as possible. As both Perez and Preyer prove that babies have many obscure discomforts which we cannot even guess,— they call them organic discomforts,— let us not deny our

natural impulse to give them many little foolish comforts. Much satisfaction is afforded by a gentle massage of the baby's back, by letting him kick out his legs, unencumbered by clothing, before the open fire, and by gentle and rhythmical pattings. All these things are better than walking the floor with him. There is nothing in a promenade about the room to quiet him, although the sight of a multitude of objects may distract his attention. Except in case of great pain, however, this laborious method of relieving the restless child need not be resorted to. Usually the swing of the hammock and a soft monotonous song are sufficient distractions.

SUGGESTIBILITY

Froebel makes a strong plea for the right of the child to have his own mother put him to sleep. He says that the child's last impression on falling asleep, and his first on awaking, should be of a loving voice and face. Thus will the tender emotions be developed in him, and his power of affectionate response be increased.

This accords well with the modern understanding of the law of suggestion, which has made us aware that the brain, on going to sleep, is in a relaxed and impressionable condition, and that impressions received then work into the very centers of being and later produce their inevitable effect. On waking, too, the brain is similarly impressionable, only in this state its impressions tend to bear fruit in conscious acts. If we wish, then, to have our children loving and sympathetic, their last impressions on going to sleep must be of love and sympathy. If we wish them to be peaceful and contented, they must fall asleep in quiet bliss. The instinct which leads a mother to pray over her sleeping child, and to kiss him as he sleeps, is a true instinct, implanted in her heart by the Father who sees that His little ones receive what they need. It is as true to the laws of nature as the instinct that leads her to feed and cherish the body of her child.

CHAPTER II

FEBRUARY

One Month Old

Now what Marion Harland has called "the still white month" is over. The mother has been sitting up, and seeing her friends, and getting pretty presents, and showing off the baby; all the time guarded by the careful nurse, who watches that she does not see too much company or get overtired or excited. She has been out-of-doors a few times, and so has the baby, well-wrapped, and carried in somebody's arms. But now the month is up, and the nurse, that faithful, beloved companion of hours of trial and of triumph, is going.

Ah! how weak and utterly inadequate that poor young mother feels, sitting in her pretty

wrapper in front of the fire, with the baby on her knees! He is a very small baby; but his problems loom stupendous to her. He may feel light to other arms, but to hers, still weak, he seems to weigh a ton. Nurse has filled her half-heeding ears full of parting injunctions, has told where everything is kept — but how shall she ever remember in time, especially if the baby cries? She does a little feeble wailing herself, as she thinks of it, and her son, as if he were a wireless telegraph station, wakes up and joins her. This is her first sharp discovery that he tends to reflect all her moods — as if he were dependent upon her spirit for nourishment, as he is still dependent upon her body.

Be sure she swallows those tears, and in the necessity for action forgets to pity herself — the first lesson in the school of motherhood. For a baby is a highest education, all by himself, and will truly prepare his diligent students for a heavenly profession, if his lessons are heeded.

FOOD FOR THE BABY

Earth has produced many foods for creatures, both young and old, but for the mammalian infant, heaven and earth have produced one food and one only, and that is the milk of the mother. To give this to the child whenever he is really in need of it, and to give him all that he wants, is the simple rule to be followed where the mother has enough of her own milk. And in many, many more cases than would appear from the number of "bottle-babies," she has enough of it, or could have, if she took proper care of herself. This topic will be treated more fully next month; for most mothers nurse their babies through the second month without difficulty, even though they give out a little later on, under the impression that a bottle is "just as good." But it isn't — not within a thousand miles! — as the mortality of "bottle-babies" bears melancholy witness.

In general, the younger the baby, the more frequently he must be fed. During the second month, he will usually demand food about every

two hours. If he frets, as if for hunger, at briefer intervals, do not feed him again at the wrong time, but, at the next nursing, feed him more abundantly.

COMPLETE NURSING

Very little babies often tire of nursing, and stop and take a little rest before they are really through. Do not welcome this pause, and put the partially satisfied little thing away, but wait a few minutes, and if he tries to nurse again, let him. Fill him up, brim full, every nursing time, if it takes, as it sometimes does, a whole hour. True, it will seem as if you were always nursing, —and so you will be half of the time, at first. But a little later you will reap your reward. For your breasts, being stripped at each nursing, will secrete more fully; and the well-nourished baby will grow quieter and less nervous, and will begin to demand food at longer and longer intervals; until, by the time he is six months old, you can count on your three hours' respite with perfect certainty.

We all know that, to dry up a cow, all we have

to do is partially to empty the udder at each milking-time. In this way we can gradually stop the most abundant supply of milk. Yet many women fail to allow the baby to exhaust their breasts, and then wonder that their milk begins, in a month or two, to grow less and less abundant.

NIGHT NURSING

But this does not mean that the baby should nurse all night. Indeed, if he is plentifully fed in the daytime, he is not likely to demand it. But if he is underfed in the daytime, he is sure to demand it! The two-months-old baby should be nursed for the last time about nine or ten o'clock, and then not nursed again until two o'clock, and again at six in the morning. This allows both mother and child to get a long, comfortable night's rest. If he wakes and cries, first see that he is warm and dry. Then turn him over, love him up a little, and see if he won't go off to sleep again. If he still worries, give him a drink of tepid water. If he still cries, let him cry till the proper time comes

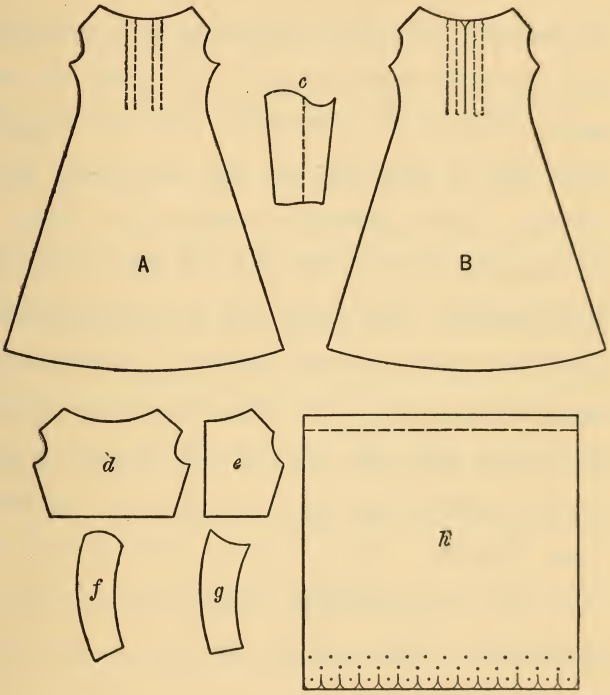
around, and next day see that he is more fully fed. Three nights of determined refusal of food at any other hours than those specified will settle him; and you and he will both take increased comfort; he will digest his food better, and be less liable to colic, and you will have more food for him.

CLOTHING

The Gertrude Suit is the simplest, most sensible, and economical plan for dressing a baby that was ever invented. Its foundation principles have been adopted into a number of different schemes. But the original inventor was Dr. Lemuel C. Grosvenor, of Chicago, Professor of Obstetrics in the Chicago Homeopathic College. He devised and named it for his own little daughter Gertrude; and after her death devoted the proceeds from the sale of the patterns to a child's bed in a hospital, also named after the little girl.

The suit is simplicity itself. It consists of three garments, all practically alike. (As de-

scribed here, the suit is somewhat modified from the original; and experience has proved the



THE GERTRUDE SUIT

A, Front of Princess garment, showing tucks to provide for enlargement; *B*, back of same, showing tucks on either side of placquet; *c*, sleeve, made all in one piece; *d*, front of waist; *e*, back of same; *f* and *g*, sleeve in two pieces; *h*, half of skirt, to be shirred on to waist.

value of the modification.) These three garments are all Princess, with long sleeves, each one be-

ing an inch smaller in every measurement than the one outside of it. The innermost is best made of stockinet, and is easily contrived from the parents' old woolen underwear if the wool has been properly washed and is still soft. In the large cities, wool stockinet may be bought. Next best is baby flannel, and next again flannelette. This garment — made just like a Princess slip — takes the place of shirt and pinning blanket. The next one is a flannel skirt, also Princess, or, if preferred, made with a straight skirt fulled on to a flannel, long-sleeved waist. The latter plan will have to be followed if the skirt is made of any of the ready-made embroidered flannels. If it is to be embroidered by hand, the Princess design is the simpler and more economical. The outside garment is just any simple cotton dress.

In making the two flannel under-garments, it is a good plan to run a tuck about an inch deep, by hand, at either side of the opening (all these garments button in the back, by the way, with good-sized, thin, flat buttons, easily fastened, and

firm). In front, lay a box plait about two inches wide, and run by hand, or catch down with feather-stitching. The use of these plaits is to let the garment out as the baby grows.

In dressing the baby, these garments are first slipped one inside of the other, as they are going to be worn, and they are then put on the baby all at once. Only once does each limp little arm have to be coaxed into a sleeve. Only once does the baby have to be turned over and buttoned up; and the good-sized buttons make this process as easy as possible. It takes just five minutes to dress a baby in the Gertrude Suit, from the time he emerges, dripping, from the bath.

SHORT DRESSES

Every year the date of putting the baby into short clothes grows earlier, until now there are some mothers who never use long dresses at all. In the Gertrude Suit, the first clothes are a yard long — that is, the dresses are; the skirts are only three quarters of a yard. This is long enough to keep the little feet and legs warm until

the baby grows better able to manage his own heat, and short enough so that it is a very simple matter to transform them into entirely short skirts. This is accomplished by merely running a tuck or two in the petticoats, and a cluster of tucks in the dresses. Or, when these are merely hemmed, by literally cutting them shorter and running in a new hem. The tucks in the waists and sleeves, described as put in when the suits were first made, may now be let out, and the sleeves of the under-garments lengthened by means of ribbing, like that on the wrists of our own shirts. These may either be taken from the mother's discarded underwear, or, much better, bought at the store. The large stores in New York and Chicago carry wrist ribbings for this purpose. They cost about twenty-five cents a pair, and a pair of large ones makes three small ones for the baby. The advantage of this ribbing is that it completely protects the sensitive little wrists, and looks neat under the dress sleeve. It may be edged with a line of crocheting, in white silk.

And behold the other advantages: Your boy is clothed from head to foot in two thicknesses of flannel and one of cotton — a perfectly equable, light, warm covering. There is no constriction of his body anywhere. All is free and loose. And there is *no band*. Dr. Grosvenor claims, with good sense on his side, that the constriction of the tender, cartilaginous ribs of a baby by the muslin and flannel bands so often used, is one prolific cause of the consumption which takes off narrow-chested adults. He also maintains that the abdominal bandage is only an abomination after the navel dressing has been removed — over-tendering the abdomen, and predisposing to colic and rupture. And then, how good the little body feels in your arms, all the young curves making themselves manifest, and snuggling up against you! The Gertrude Suit is good economically, hygienically, and esthetically.

PROGRESS DURING THE FIRST MONTH

In the first half year of life, we are told, unpleasant sensations predominate over pleasant ones

— so it is no wonder that the baby cries a good deal. One of the causes of these unpleasant sensations is, in the very beginning, the distress of birth, and often many disagreeable procedures incident to that event. Next comes ill-health. And when we remember that the mortality of the first year is greater than that for any other period, we perceive that short of a dangerous illness, there must be many degrees of discomfort, more or less obscure, which all babies have to suffer.

CAUSES OF DISCOMFORT

They all endure hunger and thirst — sometimes a surprising amount of thirst, for nurses often forget to feed water to babies, who have no way of indicating their desire for a drink of water. Probably they don't know that they desire it; they are just uncomfortable, until the cool water comes along, touches their lips, and makes them feel better. They suffer from cold — as we pointed out in January. Also from being wet, and from ill-smelling air. This last is a point which I suppose occurs to few mothers; but the fact is,

as we shall see later on, that very young infants are sensitive to odors. They suffer from chafing — very much indeed; and from hopeless sucking, in search of food; and from many necessary denials of desires; and from uncomfortable attitudes, which, while they are very young, they are powerless to change. All this makes quite a list of unpleasant sensations, which the young thing, without any strength to speak of, has to endure. We can remove many of them by intelligent care, and we ought to do it.

INSENSITIVE AREAS

Nevertheless, the very young child does not feel some kinds of pain — those confined to a small skin-area — as keenly as we should expect. He can be pricked with a needle, or touched with a piece of ice, without reacting. Certain surgeons report that they have even sewed up wounds after an operation without disturbing the babies, who lay perfectly still, and even occasionally went to sleep during the performance. This surprising fact, quite out of the lim-

its of traditional knowledge, shows how little we know about babies until we study them, and learn the results of the study of others better trained in observation than we are.

Crying, while usually an expression of discomfort, is not always so. It is sometimes a mere impulse to cry out, without special reason, just as an older child likes to shout. Sometimes it is a substitute for movement of the limbs, especially in babies who are bound in swaddling clothes or pinning blankets. In such cases, restoration of freedom to the confined limbs stops the crying.

Screwing up of the eyes, often without noise, but with the turning away of the head, is, on the other hand, an indubitable sign of discomfort, and needs noting even more than the more noticeable cry.

SIGNS OF PLEASURE

Wide-open eyes show a high degree of pleasurable feeling. This may be observed when the baby is brought near his mother's breast, or is

put in the warm bath. It is as if, as one observer remarks, the eyes laughed. On the twenty-third day, Preyer's baby added to this expression of pleasure an audible and visible laugh — though Preyer puts the date of the first conscious smile somewhere in the second month, seeming to think that the child himself was unconscious of the laughing.

When he is spoken or nodded to in this month, the surprised and interested baby opens and shuts his eyes. His eyes often move independently of each other, and even when they move in unison, it is accidental, for he cannot yet focus and control them. At the same time he makes all sorts of grimaces, wrinkles up his brows, and moves his lips — all unintentionally. He squints, too, often quite badly. This ought to disappear by the end of the month. If it does not, and he still squints a good deal, the remedy is to have him spend much time out of doors, where he can look at big distant objects and thus strengthen his eyes.

HEARING

All children are deaf at birth, and for a period varying from half an hour to a day or two thereafter. This is because the middle ear is filled with a fluid, probably amniotic. The theory is that the child swallows this before birth, and that the object of it is to protect the tender tympanitic membrane from harm, by easing the pressure of the air. We all know about how this would affect the hearing, when we remember how deaf we are when our ears get full of water — although with us the water seldom enters the middle ear. At any rate, the fluid slowly flows back along the Eustachian tube, and atmospheric air takes its place; and when that is done, the normal child hears.

There may be a further cause of deafness in the sticking together of the coats of the external auditory canal. Or the canal may be very narrow. In such cases, the deafness may last for several days. But the full-term, sound, strong child ought soon to react unmistakably to the

stimulus of loud sound. Preyer thinks that if children, born at the right time, make no movement in the fourth week when a loud sound is made behind them, then there is reason to suspect that they will remain deaf.

EARLY RECOGNITION OF DEAFNESS

But they will not — or need not — remain dumb if the condition is discovered in time, and the child taught language under the direction of an experienced teacher of speech to the deaf at the normal period for learning language — that is, at least as early as two years after birth. One reason why deaf children find speech difficult, in spite of the fact that they are possessed of all the organs of speech, is because their teaching is deferred beyond the normal period of speech acquisition. An early recognition of the true state of the case is therefore of great practical importance.

SENSE OF SMELL

The sense of smell operates in the very first days. Many infants will not take a breast that

has a strange odor. Therefore the strictest cleanliness needs to be observed; and if any medicine is used, it should be washed off before the child is put to the breast. Sometimes a child's refusal to take the bottle, after having been accustomed to the breast, is due to his sense of smell. In such cases, try blindfolding him, and holding his nose, until he begins to drink.

During this month sleep lasts not longer than two hours without interruption; but it is more profound after drinking mother's milk than after cow's milk.

During the first two weeks of this month, the child often loses rather than gains in weight; but after that he should gain from a quarter to a half pound a week.

CHAPTER III

MARCH

Two Months Old

Advertisements certainly have something to do with it. Our grandmothers felt that they must nurse their babies or dire consequences would follow; and therefore they bent every effort toward that end; and so did all their relatives. But we, who are familiar with generations of Mellin's Food babies; who see the Carnrick babies fat and bursting on the cover of the package; who know, from posters and daily papers, just how happy peptonized milk makes mother and child; we don't think it worth while to make such strenuous efforts to keep up a custom that often makes us very uncomfortable, spoils the fit of our dresses, and keeps us closely

confined at home. Besides, we feel cow-like, and animal-like, and it is hard to keep from smelling milky! At some such moment of revolt, we take up our favorite magazine, and decide to try a certain food therein advertised. Besides, we feel dragged out, and the baby frets, and we haven't enough, anyhow.

Oh, the dozens and dozens — nay, the hundreds and hundreds — of young women who, on some such frivolous grounds as these, surrender their blessed opportunity to give their children a fine start in life, and instead lay the foundation of trouble upon trouble in the years to come! Sometimes the family doctor, especially if he be young and inexperienced, yields his consent to the arrangement and recommends his favorite food, and then, whatever happens, even if the baby dies, the mother does not blame herself.

BOTTLE-BABIES

Now, I am, personally, well convinced that in nine cases out of ten the mothers of bottle-babies

could be the mothers of breast-fed babies if they realized the importance of the matter, and tried hard enough, and in the right way; and in this statement I will be borne out by every honest, experienced physician.

As to the importance of the matter: the death rate among breast-fed infants is markedly lower than among bottle-fed babies, even in the first two years of life; while, if we could follow them up through manhood and womanhood we should find the difference even more marked. For children who get through the first year of life with a full supply of non-irritating, perfectly nutritious food, exactly suited to the needs of their developing organisms, have stronger bones, better teeth, more abundant hair, better digestions, and more resisting power than their unfortunate little comrades, ushered on the stage of life at the same time, but handicapped from the beginning because of the lack of some important element of nutrition.

CHEMICAL IMITATION

Oh, yes, the advertisements all say that the foods contain the essential ingredients of mother's milk — but who, pray, knows what these essentials are? Not the chemists that the food-people hire, certainly; nor any other chemist; nor any other person. There is more than chemistry in mother's milk, as we know by the results. The careful records now being kept in the physical culture departments of some of our colleges show the difference even among children strong and favored enough by circumstances to survive to college years. Why! Would any sensible farmer wean a valuable calf and put it on any kind of artificial food, while the mother's milk could be had? Young creatures of the higher kind are meant to share the mother's life for quite a period after birth, drinking it in, warm and vital, straight from her living breast. No chemist can imitate life, nor any artificial food the potency of a living fluid.

TO INCREASE THE SUPPLY

But sometimes the milk supply does fail. What then? Last month we told of one prevalent reason for such failure — the taking away of the baby before the breast was stripped. There are other reasons for it, many of which can be overcome. For one thing, the mother's broken rest tells on her milk supply, especially before lactation is fairly established. For that reason, the baby, if fretful, should not be in the same room with her at night. She should have about ten hours' sleep in the twenty-four until she has formed the habit of nursing comfortably and has recovered from the shock of her confinement — which, perhaps, may not be for two months or so.

If she has been neglected during her lying-in, or has suffered any injury which has not been repaired, her milk will show the effects. Have a *good* doctor look her over, and put her right. She can better stand the discomfort of the slight operation sometimes necessary than endure the

slow sapping of vigor which follows so often upon ill-managed births.

Then, she must not nurse the baby all night — as we said before. Suppose that some other member of the family has to do a good deal of night work for these first few weeks — it will be best in the end, for the child's whole life, as well as the mother's, and that of the other children she may have, will be better for it. Let some one else keep the baby at night, and bring it in to the mother only at stated intervals — at ten o'clock, say, at two, and at six.

FRESH AIR AND MOTHER'S MILK

Next, fresh air has a marked effect upon the milk supply. Many women do not have a free flow of milk so long as they stay in the house. Whatever the weather, therefore, the mother should go out, at least once a day, for an hour at a time. Wrap her up well and put her in the carriage and send her forth. She will come back with her breasts tingling with good milk.

Her food counts, of course. Most women

know this, and avoid eating onions and acids, and taking strong medicines. But they ought also to avoid all fried foods, all rich and indigestible foods, such as doughnuts, pies, and dumplings; and to drink quantities of good water, not too cold. Don't you know the difference it makes to a cow? The repeated comparison may be odious, but people do know so much more about cows than about human beings! And besides, if we women could be as perfect a success in this particular direction as old Mooly out there, I think we should soon have a finer race of men and women on the earth, and fewer tiny graves in the churchyard!

FOOD FOR NURSING MOTHERS

To return to the food question: Cocoa has a deservedly fine reputation as a drink for nursing mothers. And pure milk is good; and for those who cannot stand much milk without harm to their digestion, malted milk is good. But the very best thing is old-fashioned aniseed tea. When the milk begins to grow scanty, drink a

quart of this decoction a day, until the flow is markedly increased; and then stop gradually. Here is the recipe for making it given by an experienced family physician, professor of obstetrics in one of our best colleges: —

Bring ten quarts of water to the boiling point. Then pour it over a half pound of aniseed. Let it stand for six hours; then strain the tea into a clean earthenware crock or jug and cover against the dust. Use a quart of this every day, internally, and make an external application to the breasts, bathing them four times a day. The results will not be immediately apparent, but will show in from three to five days. If the baby shows a dislike to the smell of the anise, refusing to nurse, bathe with it after nursing, instead of before, and wash it off carefully before nursing again.

BOTTLE FOODS

However, there is a place for bottle foods. Sometimes the milk supply really does give out — from mismanagement, or disease, or inherited

inability, or for other causes. Then the baby must have something else. What shall it be? Well, the first thing to try is simple cream, water, and sugar. To one tablespoonful of pure cream add three of water just below the boiling point, and a half teaspoonful of sugar. Sugar of milk is better than any other, but a slightly larger quantity will have to be used. It can be had at the drug stores, and may enable the baby to digest this food when, if it had been made with cane or beat sugar, he could not have managed it. Try this a day or two, watching the bowels to see if they remain fairly normal. The use of cream instead of milk will prevent the appearance of curds — for in cream, of course, there is no casein, the substance which forms curds. The proportions of cream and water, too, may be changed to suit the baby. A very young baby — in his first month — may take a little less cream. Later, he will take more, until, at nearly a year, he arrives at half and half.

OATMEAL AND BARLEY WATERS

As teething-time approaches, a little oatmeal water should be gently added, and again the bowels watched for the effect. If they do not grow too loose, keep up, or even increase, the richness of the oatmeal water, as it will help the teething. If they do get too loose, substitute barley water. These waters are made by boiling oatmeal or barley, a tablespoonful of either, in a quart of water for at least three hours. Strain through a cloth, and use with the cream and water mixture, to replace part of the water. Do not change the proportions of cream, sugar, and water — whether this latter be plain water, or mixed with barley or oatmeal water. A tiny pinch of salt is a good addition in teething time.

By using the grain decoctions described above, you can, with this simple food, regulate the baby's bowels almost perfectly — using the oatmeal water to loosen them, and the barley water to tighten them.

MODIFIED MILK

But if this food does not seem to agree, the next best thing is modified milk — that is, perfectly pure milk diluted, sterilized, and sometimes peptonized according to a physician's formula. This is accessible to persons living near great cities, where laboratories are kept for the purpose; but not for town or country dwellers.

ARTIFICIAL FOODS

Then comes the long list of artificial foods — many of which are excellent, so far as anything artificial can be excellent. No one on earth can tell which one is best for your baby except that baby himself. What will do with one child will not do at all with another. That is because no one can forecast the individual reaction. Suppose that some one knew — though no one does — just what mother's milk, as it actually enters the baby's stomach, straight from her breast, really contained — of salts and sugars and casein, and also of something living and unanalyzable — electrical or magnetic, or something that the

Ralston people mean when they say "glame" — supposing all that, yet no one knows what the living tissues of a child do with it, or why they assimilate it under certain conditions, and fail to assimilate it under others. Just so no one can know what they will do with various grain combinations in artificial foods. Therefore, all we can do is to experiment, very carefully, with small quantities of first this food and then that.

HOW TO TEST FOOD

If we find one that satisfies the baby, leaves his bowels in a normal condition, increases his weight regularly, and helps his teeth through, we'll gladly let well enough alone and stop experimenting right there. But if it seems to fail in any of these three respects we shall be compelled, first to make sure that it is the food that is wrong, and not something else; and second, to try all the other things again until we find one that does answer all these requirements. There are, fortunately, enough of them on the market to give us the widest possible range of choice.

PROGRESS OF THE MONTH

Dressed comfortably, well fed, and warm, no wonder the baby smiles. This, the second month, is the date set by the scientific child students for the appearance of the first true, though still unconscious and involuntary smiles. The mother and the nurse are sure to declare that the baby smiled long before this — but the hard-headed scientists will have it that the so-called first smiles are no more than accidental contractions of the facial muscles. Now, however, in the second month, they admit that the baby smiles because he feels like smiling, — when he is in the bath, is being fed, or listens to singing.

THE BABY'S CRIES

Now, too, appear the first tears, at about the same time as true smiling, as if to show the watchful mother that the capacity for joy and for sorrow is one and the same thing. During the first month his crying has been tearless.

All his cries have been watched and analyzed to a surprising degree, till now we can tell, with

some certainty, what they mean. The hungry cry, for instance, is marked by long and short intervals. The baby's eyes are tightly closed. He draws back and spreads out his tongue when fretting. Also, he shakes his head in a peculiar manner, as if to "butt" the milk from a reluctant breast, as young animals do. Bottle-babies early lose this trick, finding it useless. A final sure sign of hunger is that the baby opens his eyes widely on being brought near the breast, as if in eager anticipation, even before touching it.

The voice, at this age, is very powerful, considering the size of the child. His screaming is more persistent and vigorous when he is fed diluted cow's milk than when he is fed on mother's milk — another point in favor of nature's method!

Besides crying because he is hungry, he cries because he is wet, or otherwise uncomfortable; then the cry is lower, less insistent, but persistent. It should always be heeded, and the baby's wants attended to at once.

The cry of pain is shriller, higher, more pierc-

ing. Usually the eyes are open — sometimes very widely open.

TOUCH

There are two points on the baby's skin that are remarkably sensitive at this early period — one is the entrance of the ear, the other the forehead. So sensitive is the ear, that the baby will often stop short in the midst of vigorous howling if a finger is inserted into his ear. (N.B. Spite of the temptation, don't do this often, for fear of a nervous shock which might bear fruit in convulsions. But you can do it often enough to verify the statement. Professor Preyer, the great German psychologist, is responsible for it.) The sensitiveness of the forehead is what makes young babies so often cry out and throw up their arms when baptized.

SIGHT

This month the baby begins really to see. Last month he could fix his eyes upon a bright object — or rather, the object seemed to hold his

eyes; but when it was moved about the room, he could not follow it. Now he can. He loves bright objects, and the light — but this pleasure must be taken cautiously, for fear of overtaxing the young eyes. He cannot yet move his eyes and hands together — though sometimes his hands wave toward a bright object and happen to hit it, just as though he reached out after it. But toward the end of the month he begins to be able really to reach after it.

The squint, or cross-eyedness, over which some young mothers worry, now disappears — though when he is asleep his eyes can be seen rolling about under the lids in a very irregular fashion, and he is not yet master of his eyelids, which do queer things.

HEARING

His hearing has so greatly improved that now he starts at a new sound and even shows signs of fear. Loud noises scare him, and he tosses his arms above his head, with fingers stretched wide, like a frightened bird spreading its wings. He

does not sleep if people walk or talk in the room with him, although during the first month such things did not disturb him at all. So now he must be kept quiet when the sleeping time comes. He likes to hear his mother sing; and the sound of the piano gives pleasure.

Now, in his murmurings, appear the rudiments of speech. He sounds his first consonant — probably saying "am-ma." He says "goo," "aroo," "arra," the "r" being formed in the back of the mouth. He often shows surprise (by widely opening his eyes) at the noises he makes himself. Brightly shining objects make him cry out with pleasure.

LIFTING THE HEAD

Of course, since he likes to look at bright things, he tries now to lift his head and look around. But that is too much for so young a creature. He manages to lift it, and by and by, after much effort, to balance it; but he cannot turn it around until next month. This effort to command his body in order to satisfy an intel-

lectual hunger is regarded as one of the first tokens of a truly human intellectual life.

Exhausted by these accumulating experiences, he now takes long naps, sleeping three hours, and sometimes five hours, at a stretch. During the first month, he seldom slept longer than two hours at a time, after the first few days. His sleep should never be artificially interrupted. Such a procedure always causes distress, and may lead to graver nervous consequences.

During this month his weight should increase at the rate of half a pound a week.

CHAPTER IV

APRIL

Three Months Old

During the first weeks the baby's hands are much up and about his face. This is probably the reason — this, and the fact that sucking is his chief joy and occupation — why he so soon takes to sucking his own fists. But, accidental as the beginning may appear to be, it leads to consequences of educational importance; for, by and by, the baby begins to distinguish between his fist and himself — that is, begins to be aware of himself, or at least of parts of himself. At first, he sucks in almost perfect unconsciousness; but by and by he is annoyed to discover that he cannot at the same time suck his fist and wave it around in the air. Why is this? So awk-

ward! He frets and scolds, and then experiments — that is, he tries to suck his fist, and at the same time wave it freely — but he can't. After many, many trials, it dawns upon him, dimly, that his mouth and his fist are two separate things which have to be brought together in order that he may have the pleasure of sucking his fist. In his effort to accomplish this feat his dim will power grows; and so do the brain centers in his little head.

HAND AND BRAIN

You see, this is the way the brain and the hands, and the nerves and muscles connecting them, act: The hand touches something. Instantly the little nerves therein send word to the brain, or to the spinal cord. If to the cord, then the order back to the muscles to stretch or contract is delivered without consciousness, and the resulting action is called "reflex." Of this nature is our own action when our eyelids suddenly blink at a threatened blow, without waiting for our conscious brains to deliver the

order. Indeed, they blink so much more quickly than the conscious brain acts that we cannot, with the utmost effort, prevent them from blinking. Thus is it with the first grasping of a baby; his hand closes over anything that is put into it, just as our eyes close against a blow. He can't help it; and the higher centers of his brain have nothing to do with the action. Microcephalic babies, with no higher centers at all, grasp things in the same way. But when the baby, later on, sucks his fists, and then *tries* to get that fist to his mouth again, in order to repeat the performance, he does use the higher brain centers. A microcephalic child, without a cerebrum, could not make the effort.

Now suppose the effort to be made, what happens? The sensory nerves send word to the brain that the mouth has lost the pleasant feeling of sucking a round, soft object. The brain sends back word to the muscles of the hand to contract in a given way, and move the hand nearer the waiting mouth. The muscles so contract, the hand moves up, and the sensory nerves report

the pleasant sucking sensation as again taking place. Here, then, the baby has exercised the sensory nerves; exercised the brain in receiving reports and drawing conclusions from them; given a conscious command to the hand to move in a given way; seen that command (probably involving several dozen muscles) properly executed; and experienced the pleasure of satisfying desire by a proper exercise of the wonderful machinery of his own body. By every such act, performed with intention, the higher brain centers grow, and the will power grows.

So great is the importance of this usually unnoticed occurrence, that it can truthfully be said, that in this simple act is the possibility of all education. Indeed, in order to become a thinking, intelligent human being nothing is necessary beyond a hand, a brain, the nerves and muscles connecting them, and the nutritive organization necessary to keep them alive. Laura Bridgeman and Helen Keller, who were, you remember, both blind and deaf, practically received their education in this way — through the hand.

THE ORDER OF DEVELOPMENT

The order of development is, as we see in this instance (an order which holds good in every other), that first, automatism is established, taking care of all the movements of the body necessary to existence; secondly, instinct or inherited racial thinking, so established in the brains of offspring as to require no conscious personal effort, comes into play; and thirdly, the child's own intelligence takes up the inherited machinery and uses it for his own ends — ends that become increasingly wide, and complex, and conscious as life advances.

About this time the child may be observed closely studying his own hands — and feet; for he tends to use them alike, as if he belonged to the quadrumana. Darwin observed his boy looking at his hands so fixedly that his eyes crossed.

But he does not yet know that he can move his hands and feet separately. If you watch closely you will see that he tries to do with his feet whatever he does with his hands — that his

toes grasp, as his fingers do, and at the same time that they do.

IMPORTANCE OF TOUCH

It is of real importance, at this stage of his growth, that he should be allowed, and even encouraged, to touch the widest possible variety of objects. He should by no means be restricted to merely pleasant, smooth surfaces. The children of the rich, with their carefully appointed nurseries and watchful nurses, are here, at the very beginning, deprived of one of those educational experiences which make the children of busy parents so much more capable than the others. Babies beginning to feel things with their hands should touch all sorts of things — the more diverse, the better — hot, to the point of discomfort, but not of danger; cold, to the same point; rough, smooth, hard, soft, fuzzy, slimy, silky, bumpy — all sorts of contacts should be multiplied for them, to the end that they may accumulate the greatest possible mass of material upon which the developing brain may act.

Awaiting the dawn of this interest, it is well to lay upon the baby's tray, at table, all sorts of queer, feelable objects which will meet and interest the groping little hands.

INHIBITION IMPOSSIBLE

Also, it is absolutely necessary to keep out of their reach everything which the hands really must not touch. It is worse than folly — it is cruelty and folly combined — to tell a child under two years old that he must not touch this or that. "No, No!" we've all heard mothers say, peremptorily, slapping the little hands. "Naughty! Naughty! Baby must not touch!" But the baby's mental mechanism is such that he can't help touching. The mental machinery necessary to make him overcome a strong motor solicitation has not been established in his brain. He may understand you perfectly, but he *cannot* obey you. The only thing to do at this stage is to keep out of sight, and out of reach, those things which he must not touch.

There is one exception to this rule, and that

is in the touching of fire. If a very young child, just beginning to creep, say, is in danger of touching a lighted stove, he can be taught better, not by appeals to his reason, or by exercise of authority, but by an appeal to his reflex nervous system. That is to say, he may be permitted to burn himself very slightly — but enough to give him a very sharp and unpleasant shock. This impression will then be so powerfully registered that the same mechanism that makes us blink our eyes will make him shun the fire. Perhaps, too, there is some inherited aptitude for this particular lesson; for it must have been necessary for the human race at a very early period. At any rate, this is the right thing to do about lamps and fires, for thereafter the baby is safe; and his activity and interest need not be restricted in order to protect his life.

AMBIDEXTERITY

Dr. Seguin, former United States Commissioner of Education, makes a strong plea for ambidexterity at this early period. He says that we

greatly injure our children by trying to teach them to use their right hands in preference to their left. He says that from every point of view, we ought to encourage the use of both. In the first place, as we have seen, the use of the hand, with intention, leads to the increased growth of the higher brain centers. We all know, of course, that the centers affected by the motion of the right hand are in the left side of the brain, and the centers connected with the left hand in the right side of the brain. Now it is true that in human beings the left half of the brain is markedly larger than the right, and that, in left-handed individuals, the right side is larger than in right-handed ones. So Dr. Seguin argues that if all children used the left hand more freely, all persons would have a more symmetrical brain. There would be, he thinks, an increased brain-area, and an increased power of using the hands. He points out that in animals, where the two sides of the brain are fairly equal in size, there is great grace, beauty, and evenness of temper — as in the deer and the horse; while

in more one-sided animals, like the beasts of prey, there is, indeed, plenty of intelligence, but coupled with a more unstable temper. At any rate, it is plain that the child who can use two hands is, other things being equal, better off than one who can only use his right hand. Modern machinery is making this double use more and more advantageous, for nearly all the complex machines, like the typewriter, call for the use of both hands.

THE OTHER SIDE

It is only fair to add, however, that some psychologists disagree with this dictum of Dr. Seguin's, arguing that the attempt to teach the use of two hands at once leads to mental confusion. These authorities say that to double the brain area in active use is not to double the brain power, any more than the use of two eyes doubles the sight, or the use of two ears doubles the hearing. They maintain that children who are taught to use two hands are awkward with both; and that the partial development of two speech centers — brought about by the use of

two hands — sometimes leads to hesitating and uncertain speech, because the two centers do not always act simultaneously.

I confess that these arguments do not sound conclusive to me. Imagine them applied to the eye — shall we darken one eye, because the young child, and sometimes the adult, focuses two with difficulty? It is true that the use of two eyes not properly focused leads to eye-strain, to headaches, and various nervous disorders — but that is not accounted sufficient reason for using only one. Every other pair organ in the body — the lungs, the kidneys, the eyes, and ears — is used in both its parts; why not the brain? The sane conclusion seems to be that the child should be encouraged to use both hands, though not prevented from using the stronger one, whichever it may be, whenever such use enables him better to accomplish his purposes. Certainly, I do not believe we ought to insist upon right-handedness.

The first time that our baby grasps things he does so with all his fingers, including the thumb,

folded about the pencil, or whatever the object may be; but toward the end of this month, when he is nearly four months old, he begins to oppose his thumb to his fingers, as we do. This, most psychologists agree, is the sign that he now grasps objects with conscious intention — his will and his intellect are taking possession of his hands and shaping them to human uses.

About this time, too — just before he is four months old — he begins to hold out his arms to be taken. That is, he who has learned to grasp small objects now reaches out to grasp his mother or his father. It is almost his first marked proof of affection, and correspondingly beautiful and touching.

What, then, have we seen, in the way the baby uses his hands? We have seen how he transforms the outer world of objects capable of giving rise to sensations, into an inner, human world of thought and volition. It is as if we saw him take up the hard world of matter into his little dimpled hands and transform it into the inner world of spirit.

PROGRESS OF THE MONTH

Now do the signs of human intelligence and affection multiply day by day, until it is hard to keep track of them. In this month the baby begins to use his hands, and we see, perhaps, for the first time, what wonderful instruments of the human spirit they are. He can sit up against a pillow and look all around, and can hold out his arms to be taken. He is able to tell us with greater distinctness what he wants and how he feels. Let us see what some of the ways in which he tells us are.

In the first place, he shows us very clearly whether he is satisfied with his food or not. He thrusts aside the nipple with his tongue when he is through nursing, and does it with almost a look of disgust. If he doesn't do this, but still frets for bottle or breast, be sure he has not had enough; and give him more. There are a number of books on the market advising young mothers, on so-called scientific grounds, to give so many ounces at two months, so many more at

three, and so forth. But it is not safe to follow any such hard and fast rule; children differ too much.

VALUE OF AVERAGE RECORDS

Even the observations here recorded are not to be taken as final. Your child may advance to this or that stage of development faster or slower than the average baby here pictured, without anything being wrong. But if he is ahead of his schedule *all the time*, in every respect, you have reason to suspect precocity; and consequently, you will know that, instead of stimulating that baby, you will have to hold him back, and encourage quiet and stupidity. While if he habitually falls behind in all respects, you will have reason to look to his nutrition; and finally, if the backwardness persists, to take him to a sensible doctor, to see what is wrong. He *may* be all right — simply slow; or he may not be properly nourished; or there may be graver reasons. The point I am making is that, although we here record the development of an average healthy baby, month by month, it is by

no means intended that you should conclude that your baby must grow after just this fashion, or else something terrible is the matter with him. The records here are *average*, and there may be wide variations from the average, *in certain particulars*, without damage to health or intelligence. But if there is persistent and marked variation *in many particulars at once*, then it is time for you to occupy yourself with seeing what is wrong.

SATISFACTION AND DISCOMFORT

To return to the signs of satiety: The satisfied baby, after he is fed, shows every symptom of a lively enjoyment. He laughs, opens his eyes wide, and then half shuts them. And he makes inarticulate cooing sounds, so expressive that a person in another room, who does not see him nor know that he has been fed, perceives that he is feeling very happy. If he falls asleep soon after being fed, he smiles in his sleep, with an expression of great content.

If, on the contrary, he is in some slight discomfort or discontent, he shows this fact by a

lack-luster eye, by indolent movements, by pallor, and by a peculiar set of the features, which no longer move under the play of feelings. They are passive and expressionless. When all these signs appear together, there is reason to infer some disturbance of health, and to look to its cause.

In this month, that sign of discomfort which is characteristic of young children appears. It is the drawing down of the corners of the mouth, often accompanied with a plaintive cry. This sign increases in intensity up to the fourth year, and is one of the most delicate signs of discomfort. Even in sleep, the droop of the mouth corners may appear, giving the face a most doleful look. Watch, then, the angle of the lips, and when it tends downward, look for trouble — and take measures against it. You can often in this way stop the baby's crying before he fairly knows himself that he is going to cry.

CAUSES OF DISCONTENT

It is not, however, always easy to discover the cause for his depressed condition. Frau Dr. Friedemann tells about a little girl who cried pitifully at the sight of her mother with a big hat upon her head; as soon as the hat was removed she stopped crying. Eyeglasses and spectacles often produce this impression upon children who are not used to them. The distress seems to arise from surprise mingled with fear. Young animals show the same tendency to fear in the presence of the unexpected.

It is comforting to learn that, among his many causes of discomfort, the baby has nothing to fear from nausea. We are told that he does not experience it, no matter how often he may vomit. The act is a simple regurgitation of too abundant, too swiftly taken, or unsuitable food, accompanied with none of the distress which we adults associate with the act.

HICCOUGH

Hiccough is frequent, and Preyer records, with astonishment, that it can be relieved by a little lukewarm, sweetened water, put, a few drops at a time, upon the tongue, though he adds that he cannot discover any reason for the potency of the simple remedy.

SLEEP AND FOOD

The baby now sleeps for longer periods than he did at first. His waking periods are also longer. He often sleeps four or five hours without waking, and has occasional long nights of ten hours' sleep without any waking.

His nursing intervals are now at least three hours apart, and sometimes longer. They may vary slightly, to suit his temporary needs. For it is observed that a tired child, especially one who has been played with a good deal, and been pretty well stimulated, gets hungry sooner than a placid, unhandled baby. We have all noticed how a sudden access of hunger and fret-

fulness will take possession of the baby, almost in the very midst of cheerful play. This is because his activity has caused a large destruction of nerve and muscle cells, with consequent need of food repairs.

VOLUNTARY MOTIONS

During the first three months he makes no voluntary movements. Not but that he moves, and moves freely; but that his brain machinery for executing *desired* movements is not yet completed. Few of us realize what an extraordinary thing it is for the brain to be able to command the arm and hand, for instance, to move in a given direction. It would take some time merely to count the many muscles and nerves involved in the issuance and execution of this command. And each muscle must contract in due proportion to its neighbor, the whole regiment of them moving in perfect disciplined array, like a well-drilled band of soldiers. It takes more than three months, wonderful as is the baby's growth, to complete this discipline.

He cannot, therefore, at this period, so much as free his face from bedclothes, if they fall over it; or turn aside his face, if he happens to roll upon it. Unless he is released from his dilemma by some older person, he must even die there, of suffocation — as many babies have done.

HELPLESS AGAINST SUFFOCATION

Here's a true instance in illustration: The little son of a prominent lawyer was left by his nurse asleep in his baby carriage in the vestibule of his home. He was accustomed to sleep thus, in order to get the fresh air. This time, when the nurse went to him, she found that he had fallen over among his pillows, and was dead! — a perfectly healthy little baby. And there is another case, that of a woman living in the country, who, on rising in the morning, made the bedclothes into a tent above the baby, so that he could lie there and keep warm while she built the fire. When she went to take him up she found that he had stirred, and in stirring had knocked down the tent. The weight of the

bedclothes had killed him. These facts, and many others, indicate the practical importance of some definite knowledge as to what may be and what must not be expected of a baby.

SITTING UP

Our three-months-old baby can now sit up against a pillow, and he dearly loves to do it, for the attitude frees his ears, his hands, and his eyes, all of which he is learning to use. He should be well propped, and never encouraged to sit alone until he insists upon it. The rule is that, as soon as a healthy child is able to exercise a new function, he will be eager to do so; and he should never be urged.

FIXATION OF THE EYES

His eyes no longer move irregularly, as they used to do, but can now fix an object, and follow it about the room, accommodating themselves to near and far objects. They look with especial joy at the mother's and father's faces; and as Miss Shinn observes, these objects seem to be

especially fitted to attract and educate him. They move; they have many lights and shadows; from them proceed all sorts of pleasant, loving noises; they are associated with many experiences of love and comfort and ministration; so that they at once please the interested little eyes and the awakening little heart.

HOLDING THE HEAD

Now, too, Baby notices the ticking of a watch, and moves his head. The first efforts to hold his head erect arise from mere surplus energy, that, wandering about the body in search of something to do, contracts these neck muscles, as if by accident. But he very soon discovers that in this position he can see better and hear better; and thus, following on automatism and instinct, we see again the voluntary action taking place. His head is raised for him, by his own machinery, going off by itself, as it were, in the first place; then instinct prompts him to repeat the movement; then, having experienced its advantages, he *wills* to raise his head, and from

that time on he is master of it. Not suddenly, of course, but with increasing ability. He can turn it around, this month, too, — toward the latter part of the month, — thus following interesting sights and sounds, and adding to his store of experiences.

AMOUNT OF FOOD

This month his weight ought to increase at the rate of about three fourths of an ounce a day. His stomach at the beginning of the month holds about three and one half ounces, at the end of the month about four and one half ounces. It is on these facts that the books of advice to mothers, already referred to, base their rules about the amount of food to be given at a time; but, as we have already said, there is too much variation in individual babies for any such hard-and-fast rule. Do not go so much by the measuring bottle as by the signs of satisfaction enumerated above. For one thing, a baby's stomach empties rather fast, and a slow-nursing baby can dispose of more than three and one half ounces at a time without distending his stomach. Many bottles, on the

contrary, feed too fast; and the child's stomach may fill up too full for comfort, while yet he has not enough milk to supply the needs of a rapidly growing and active organism. Let him tell you, then, as he knows how to do, when he has had enough; and let no one else put in a word against him.

THE CONSCIOUSNESS OF SELF

If, this month, we hold him up to the looking glass, we shall find that the glass itself may please by its brightness, but that the baby does not pay much attention, if any, to the image of himself therein contained. His "I feeling," as the psychologists call it, is not yet enough awake for his own image to interest him. Next month we shall see a decided difference in this respect. Now he seems to feel much as a young monkey did. That animal gazed in astonishment at first, then passed his hand back of the glass, — thus exhibiting considerable intelligence, — and then turned away in disgust. Nor do monkeys seem ever to get past this stage. But babies do.

SPEECH

As for speech: During the first two months the baby spoke almost nothing but vowels, with a guttural "*r*" that was almost a vowel. Now he says *m* frequently — seems, indeed, to be saying "mamma," though without the least idea of the significance we attach to these syllables. He is simply exercising his speech machinery — getting it ready for use. It is an interesting fact that all normal babies *express* emotions and desires by means of sounds, even by syllables, long before they can understand or imitate the sounds made by others. If the true bearing of this fact were recognized, I think we should have, in our schools, less imitation and response to the teacher's questions — that is, fewer recitations; and more spontaneous observation and expression — thus following the natural order. Even so early as this, babies begin to recognize and distinguish many vowels and some consonants in words spoken to them. But, of course, they do not know them as speech, but only as sounds,

which they are interested in hearing. The more they hear, within limits, the more delicate will be their later appreciation of language. Mothers are not so foolish as some pedants would have us believe when they talk and talk to quiet, observant babies. Most of the mother instincts, as Froebel saw, are sound and true.

HOLDING OUT THE ARMS

Toward the end of the month, as we have already noted, we see the often sudden appearance of that gesture which always fills the mother's and father's heart with delight: the gesture of holding out the arms to be taken. That the gesture is a truly human one may be seen from the expression of quite indescribable longing which usually accompanies it.

This month, as we see, is one of great interest. In it the baby seems to have made remarkable advances, and to come within communicable reach of our own understandings. He begins to be a separate individuality, no longer the mere recapitulation of the past of his race. But in

truth the foundation for all these activities was well laid in the two sleepy months that preceded this.

CHAPTER V

MAY

Four Months Old

During our first observations of the baby we were upheld by a tremendous enthusiasm; and the task was so delicate and subtle that we needed all that enthusiasm to accomplish it. Now, however, when the baby is four months old, and distinctly a human being with traits all his own, and a will of his own that shows plainer every day, observing is a less difficult business. That is to say, there are plainly a great many things to observe and to note, growing constantly more numerous. But also we are more used to the wonder of the baby. Although he only came to live with us four short months ago, it is already impossible to imagine the house

or the family without him. He has brought us much joy, and caused us much trouble, and given us considerable wholesome discipline. Whereupon we, being, although mothers, not yet wholly regenerate beings, occasionally feel a good deal like disciplining *him!* As his will develops, this feeling is likely to grow upon us; and who of us has not seen mothers who were already somewhat at variance with their young babies?

Therefore, we must set ourselves with renewed determination to the task of studying and understanding this little marvelous being whom we have borne. Even so early it is something of a task to understand him — a task that will grow harder and harder as the years roll on. Be sure that, if we do not perform it properly now, when it is comparatively simple, we are not likely to find ourselves able to perform it satisfactorily in the days that are coming.

NEED OF LOVE AND UNDERSTANDING

Babies need understanding — clear-eyed, sympathetic comprehension — almost as much as they

need mother's milk. The latter nourishes their bodies, but the former shows us how to provide food for their growing souls. They need love, too—great, abundant supplies of it. No one of them ever had too much. When a baby seems to be spoiled by too much love, it is not that his mother gives him too much love, but that she mixes it with too little sense. Let us permit our adoration to flow forth freely and deny it not, but let us send forth our wisdom in an equal stream.

It is a well-known fact that babies in maternity hospitals, foundlings' homes, and other institutions equipped with the most modern hygienic conveniences; babies whose food is sterilized and regulated, and whose hours of feeding and sleeping are perfectly adjusted by rule; whose clothes are comfortable; who have every physical advantage; do not thrive so well as other babies in houses less clean, with many physical disadvantages, but with abundance of family affection. It is plain to every close observer, however scientific, that the child is *not* a little animal

from the start, — or rather, not a mere piece of delicate machinery, for animals, too, thrive on affection, — but is a mass of budding affections and thoughts. These must be cherished and nourished as well as the body, or the body itself will not grow as it should.

DISCIPLINE

During this fourth month the child begins to exhibit affections and preferences. He smiles with pleasure at the sight of his mother or father or nurse. He has, for a month, been putting out his arms to them, in token of desire; now, in many other ways, most indescribable and most appealing, he exhibits love; and now, of course, the mother responds most fully. All is well, unless somebody comes along and urges her to "discipline" this loving, tender creature — unless, too, her own will longs, now and then, to have full sway, and put an imperative stop to an inconvenient crying. In that case she must even take council with herself in the quiet night-watches, when she is not impatient, nor driven

by household duties; and then remind herself that what the tender young creature beside her needs is not discipline at all, but love and understanding.

As Froebel justly remarks, the moment that the mother's will clashes against the child's will, there is the beginning of an alienation that is the root of all mischief. And as Preyer, the hard-headed German scientist, has remarked, love is the stimulus under which the young soul unfolds its powers most rapidly and naturally. If we love our children enough, and understand them enough, we shall have little or no need for painful discipline.

To help us gain this understanding, let us watch the young soul as it grows, and if possible, make simple, short notes in some blank book kept for the purpose. Such a book will be invaluable as the years roll by. With this book as a general guide, note in what particulars your own baby differs from the typical baby here described. Keep the book and an indelible pencil near by, and, without waiting to make the

record very tidy or phrasing it well, note down, on the spot, the ideas that occur to you from day to day, and the occasions that give rise to them.

PLAYING WITH THE BABY

If you give free rein to your mother impulses, you will find yourself entering into all sorts of games with the interested, wide-eyed, responsive baby. Don't think this a waste of time. Give up making pies and cakes, and sewing elaborate clothes for baby or yourself, and give plenty of time to the active plays that develop his mind and soul and keep you young and fresh — fit to be his mother. Do you think a worn-out, nervous, anxious woman is fit to be the mother of a young immortal soul?

Froebel, in his "Mother-play Book," shows how the simple songs and games of the mother in unity with the child have in them the actual foundations of all later educational advance. You will never know your baby so well as by playing with him; you will never enjoy him so much; and he will never get more from you.

We've been finding, all along, that motherhood is a highest education, haven't we? —far and away better than any college course. Well, perhaps this play department, which, in this fourth month first begins to appear distinctly, is the most important department of all. It is not only necessary in order to be a good mother that we should know how to feed the baby properly, how to dress him, how to put him to sleep, and to take him out, how to keep him clean and healthy; but it is just as necessary that we should understand him and love him. Both understanding and love find expression in play, and are fostered by it.

PROGRESS OF THE MONTH

In this, the fourth month, the baby shows himself so plainly an intellectual being that his progress is almost too swift to chronicle. His mind and will are both awake and active, and every day is full of interest. He is so keen to see and feel and know that he can now be coaxed even past his feeding time; but it is not desirable to do this except under pressure of unusual

necessity, for the rapid waste of brain and nerve tissue brought about by his activities creates a necessity for plenty of food for repairs. Our object is not, of course, to keep him going on as little food as possible, but rather to give him as much as he can use to advantage.

He can now, also, get too tired to sleep properly. Be careful of so wearying him, for this is a very bad nervous habit to form. Indeed, most American children already have a tendency to too great nervous irritability, and this ought to be guarded against most carefully. Fatigue often comes on suddenly, almost without a note of warning, in the very midst of cheerful play. Heed the signals, and take the baby at once into a quiet, darkened room, feed him, and put him to sleep. Fond relatives won't like this, and will keep on turning and tossing the baby, and giving him new things to play with, to get him "good-humored" again; but, although they may succeed, it is at the expense of that precious reserve nervous force which he ought not to be allowed to expend on so trivial an occasion.

SITTING ALONE

He begins to sit up alone on your lap; but that is because he is partially supported by your knees. He topples over if he is set upon the floor. Even in your lap he suddenly collapses, showing that his young will is not yet equal to sustaining this particular effort. Don't try to hurry or persuade him, no matter how anxious you may be for his triumph. He will have a stronger back and be a happier baby if you let him gain power without a particle of urging. Just as soon as his internal and external machinery is all right for him to sit up alone on the floor, be sure he'll perform the feat with certainty and success.

Miss Shinn, in her "Biography of a Baby," tells of a novel device which has been used in her family for long, to help the baby over this period, when he likes to try to sit alone, but cannot manage it without some support. It is an old horse collar set on the floor, and covered with a blanket that can be easily washed. The baby

sits inside, supported just about as much as he is on his mother's lap. All around are his playthings, and the low sides enable him to reach over and get them again when they escape him. She records that her little niece made her first acquaintance with the back of her own head by throwing herself back in this collar and bumping the back of her head on the floor.

However, there are times when our youngster ought to be allowed to sprawl freely on the floor on his stomach, without even the confinement of such a collar, for in this way he has a chance to exercise those muscles which will later be useful to him in creeping.

HOLDING UP THE HEAD

He now holds up his head permanently. That power, possessed by no animal less than man, is now his for life; and is regarded by psychologists as a sign that his will is now steadily active. For it takes will to hold the head erect. Even adults let it drop when they sleep. Until about the fourth month the baby is not able to make this

steady exertion; but thereafter, for all his life, he is able; and, as we have seen before (see last month's outline), the motive that induces him to make it is an intellectual one. He is not urged by the need of food or rest, but by the desire to collect fresh impressions.

This same little head now turns with certainty in the direction of a sound heard.

He begins to bite, this month, although his jaws are, of course, still toothless. Biting, Preyer thinks, is exactly as instinctive as sucking, although later in putting in an appearance.

IMITATION

Now, too, appear the first faint and uncertain beginnings of imitation. Preyer records that in this month his little son first tried to purse his lips up in imitation of his father, and did it very imperfectly. This was the more noticeable, because he had often pursed his lips before, quite perfectly. But the imitative act was an act of the will and was therefore poorly done, because the will was not yet master of its materials; while the

first act was instinctive, and performed perfectly, because then the baby was only being exercised, without his own knowledge, by inherited forces. If you play the piano, you know that you can sometimes play a piece by trying not to think of it; while, if you get to thinking about how the left hand ought to go, you fail altogether. That is because you have, in learning the piece, committed it to your unconscious mechanism, which then works much as instinct works; but when you try to remember with your conscious brain, all this unconscious machinery is interfered with and refuses to work. So it is with the baby's first efforts at imitation — they are less perfect than the former instinctive actions; but they belong, nevertheless, to a higher stage of development.

GRASPING

The baby now finds distinct pleasure in grasping at various objects. He is still far from being able to estimate distances, and frequently grasps short. When he succeeds in getting hold of anything he promptly moves it to his eyes. He

now almost always opposes his thumb to his fingers in grasping; and the grasping itself is no longer merely reflex, but is often an act of the will.

As for his speech, it gains in variety — I mean that his utterances, which are not yet speech, but are practicings for speech, gain in variety. They are all expiratory, — that is, spoken on the out-going breath. He says "nan-nana, na na, nanna" in refusal. When he screams he says something like "amme-a," and as a sign of special discomfort repeats over and over again "oo-a, oo-a, oo-a, oo-a."

KNOWLEDGE OF HIMSELF

Although he is so very attentive to the outside world, taking it in at every pore, as it were, he does not yet clearly distinguish his own body from it. It is in this month that he first begins that series of investigations which will so convince him that he and his body are much closer knit than he and the rest of the outside world that it will take him many years to be able

clearly to conceive that, by any possibility, he and his body could part, and he remain himself. I have often wished that we adults might experiment as long and patiently to prove ourselves distinct from our bodies as the baby does to prove his body distinct from the outside world.

For one thing, he looks at his own hands and fingers, as well as the objects that they seize, and regards them most attentively. One may see him do this every day, and often many times a day. He now looks at his own image in the glass, — not merely at the glass itself, as he did last month. He looks at it as if he were looking at another person, whom he recognizes, and laughs as he does so.

Sleep now lasts five or six hours at a stretch, and should not be interrupted, even when feeding time comes. Sleep is necessary for repair and growth to as great an extent as food itself; and every artificial interruption of sleep is a nervous shock.

The stomach holds four and one half to four and three quarter ounces. The baby should

continue to gain at the rate of three and three quarter ounces per day.

But the marked gain of this month is in the permanent holding of the head erect. Should there be failure to do this, the baby's nutrition and general hygiene should be looked to at once; and if there is no gain as the fifth month comes in, it would be best to consult a physician.

CHAPTER VI

JUNE

Five Months Old

In the second quarter of his life, our baby begins to have active pleasurable sensations. As we have already seen, the first months have in them much more discomfort than comfort. That is, the active sensations are more likely to be painful than otherwise. The comfortable ones are very passive in their nature, meaning, for the most part, mere absence of pain or distress. But now there is active enjoyment — a much higher state of consciousness than the warmth, satiety, and mild, agreeable sensations of pleasure in tasting, seeing, and touching which have hitherto been responsible for the baby's vague smiles of content. And it is significant that this

first active enjoyment comes through his new power to use his hands — to do something.

Thus early in life do we see exemplified the vast truth of which we lose sight so often in later life — the fact that the highest happiness man can know comes from his power to work — to transform the face of nature, to inaugurate changes, to do things. Yet we adults become in time so perverted that we act as if we would fain escape that power to change and make over which we call work, but which the young baby, yet dwelling in his innocent Eden, finds to be happiness. Probably this is because we have not yet learned how to regulate the amount of work, so that we are too often fatigued by it, and therefore fail to discover what it might do for us if we took it in more moderate quantities.

But this is a digression. The point now is that the baby's small, tender hands, at last able to seize upon objects and move them as his will directs, open for him, by their activity, the door to his first active pleasures.

CREATIVE ACTIVITY

His great delight is to produce some change, and to feel himself the cause of the change. This is what Froebel called "creative activity." He saw that in this particular, almost more than in any other, the child was the image of his Creator, who fills the whole earth with His activities.

The baby loves, especially, to create changes of form, as when he takes pieces of newspaper, tears them into many small bits, and lets them drop through the air, so that, where a minute ago there was a big rustling sheet of paper, there is now nothing; or when he rolls up a big piece into a tight ball. Newspapers are almost ideal playthings for him at this age, being light, and very large and noisy, and full of possibilities. What if we do have to keep fishing small pieces out of his too-inquiring mouth? That is a small price to pay for his joy and growth. For he is, every moment of this play, gaining knowledge of his own powers that not only gives him

intense satisfaction, but that increases those powers themselves.

SCRATCHING

For the very same reason he develops, now, a very unpleasant little trick; he takes to scratching. All of a sudden, out flies the innocent-looking little hand, your cheek burns, red streaks show across it, you cry out, the baby is told that he is "naughty, naughty." Now, that's a surprising result to get from so simple a movement, so he tries it again. Just think for a moment of how it looks to him. Here is his mother's pleasant face smiling at him, all pink and white. Without so much effort as is required to tear paper, he finds he can streak it with red, make all its features move in a surprising manner, and make lively sounds issue from its mouth. No wonder he repeats the experiment!

The best way to stop him is to avoid giving him these sensations. Put him down promptly, without allowing him to see your change of countenance — if you can help it! — and let the only result of his action be an uncomfortable

stillness and emptiness, continued until he begins to cry at it. As he does not enjoy that kind of a change, he will soon cease to make the motions necessary to bring it about. The difficulty will be in making other persons understand that this is the way to act.

HAIR-PULLING

Preyer reports that his boy, at five months of age, liked to pull a glove into shape — or at least uncrumple it — and to pull his father's hair and beard. Here, again, domestic discipline must interfere with scientific observation. For, if the baby is allowed in the beginning to pull hair, he will certainly continue the practice far beyond the point of discretion. Haven't you seen older children made martyrs to the baby in this regard? I knew one big boy, with a shock of foot-bally hair, whose mother used to beg him to let the baby pull his hair for a while, till she got dinner! Give the baby a toy sheep, or an old muff, and let him tear those, if he must; but don't let him find out how enticing human hair is, if you value

peace! And here you will have to instruct Father first of all. For his beard invites the baby's eager fingers, and at first he will enjoy it as much as the baby; but later, when the youngster's strength grows, Father will not enjoy this new activity at all, and then will arise an unnecessary friction between him and his offspring.

NOISES

Now, too, Baby learns how to ring a bell; and a small silver one makes an appropriate present for him on his fifth monthly birthday. Noises now have for him powerful interest. Preyer's baby stopped in the very midst of his nursing to listen to the striking of a gong. Our baby's sleep, we find, is now easily disturbed by any noise.

OUTSIDE INTERESTS

One of his greatest pleasures is in going out of doors, but it seems probable that it is not so much what he sees there, for he does not yet seem to take a very lively interest in it, as the fact of the fresher air, the greater light, and

the change of sensation that causes the pleasure. Later, he will begin to notice, more and more, the sights and sounds about him, and his daily outing will be a steadily increasing source of pleasure, as well as of health.

DIRECTION OF LOOK

As yet, however, he does not seem to care to look at swiftly-moving objects, although he is at last able to follow them with his eyes. But it is, apparently, something of an effort, and does not give him pleasure. In a street car he will look at the things within the car rather than at anything out of the window. He looks, too, at the ceiling, with his head thrown back, and sustains this regard beyond any reason that we can discover.

He notices, too, when any one whom he has learned to know leaves the room, and looks at him wonderingly and thoughtfully. It must be almost as difficult for him to understand why his father disappears from sight and sound when he goes past a certain place in the wall, as it is

for us to understand the mystery of death. After a while he will cry out when his mother leaves, probably feeling that he has lost her altogether.

SENSE OF DISTANCE

He reaches after almost everything that he is interested in, and he is still far from knowing how near or far objects are. This is a matter of repeated experience; and it is amusing to see how entirely the baby yet lacks experience of distance. We adults know so well that a certain kind of shadow, a certain softening of outline, means that the object we are looking at, the object which, as far as the eye can inform us, is a flat form against a more or less solid background, like a figure in a picture — we know so well that this object presents such a softened appearance merely because it is distant, that we actually forget that it *looks* near. In order to learn to draw it in due perspective we have to recover, as Ruskin says, "the innocence of the eye" — the way the eye saw when we were babies. Then the whole world was just a flat pic-

ture of large and small, dark and light objects, with nothing about them to indicate whether they were near or far. Only the thousand-fold repeated experience of moving through space in order to grasp objects that present a certain kind of appearance has taught us to make the discrimination which as yet the baby cannot make.

PUTS EVERYTHING IN HIS MOUTH

He tries to carry everything — even the moon! — to his mouth. This is probably because heretofore all his strongest and pleasantest sensations have come to him through his mouth. If he is trying to seize some object too heavy for him to lift, like a mirror, he draws himself toward that, and applies his mouth to it. Do not check this tendency, even though he does get his face dirty. Out of such repeated sensations come the materials for thought; and the wider and more complete his collection of sensations (within reasonable bounds of safety), the better stored will be his brain.

When his attention is strained, Preyer noticed

that his lips protrude, as if he were trying to take hold of the idea with his mouth, — that flexible little organ which has always done so much for him, and which does not know that this is a feat with which it is not concerned.

The order of development seems to be this: first, the baby tastes things; next, he sees them; later, he sees and desires to taste. Then he tastes, and again desires, more than before. Thereupon he sees, seizes, and tastes. You notice the increase in desire; and the increase in the number of senses and faculties that work toward the gratification of this desire. This is will, taking greater and greater possession of the human body.

ARTIFICIAL NIPPLES

This activity of the sense of taste, and the fact that something to taste and feel with the lips keeps the baby quiet, has led to the widespread employment of that abomination of abominations, the artificial nipple. This so-called "soother" is just as much of a mockery for the baby as alcoholic soothers are for older chil-

dren. The baby thinks he is getting something and sucks and sucks, and turns it over with an expectant tongue; but he gets nothing but emptiness. There is a danger, that as yet looks far-fetched, in thus urging him to turn to sensations of feeding and swallowing for his joy, — in exaggerating beyond the bounds of Nature the pleasure of food-getting, — of making it so much of an occupation that he is unwilling to forego it at all. Surely, this looks like the beginning of sensuality. But, whether this is far-fetched or not, there is no doubt that the habit is useless, and even harmful.

For one thing, if there are any germs floating around, some doctors say that this continual suction is the quickest way to prevail upon them to enter the baby's system and take up their abode there. For another, the continual flow of the saliva is bad for the digestion because, as in the case of chewing gum, the saliva, being thus overproduced, gets weaker and weaker, and finally loses much of its special digestive virtues. But finally, and most plainly, the habit is almost

sure to lead to a serious malformation of the jaw.

Who has not seen the face of an otherwise pretty girl spoiled by protruding teeth, over which the lips will scarcely close? These teeth are usually the result either of thumb-sucking or of the persistent use of a blind nipple. I saw three girls in one family, all of them with "soothers" suspended about their necks, and all of them thus deformed. The oldest was about five years old, and her teeth stuck out almost at right angles to her narrowed jaw. The next was three and a half, and her teeth also protruded noticeably; the third, at a year and a half, already showed, with her few little teeth, the same tendency. All three were sloppy from the continual drip of saliva, and the expression of their faces was noticeably vacuous. The mother said she couldn't break them of the habit, because the attempt made them so fussy. She had to have a little peace in her life! I thought her a wickedly selfish woman. What do you think?

THUMB-SUCKING

The effect of thumb-sucking is exactly the same. Many women think the habit "cute" and "cunning," and so permit its formation, not realizing what troubles are in store for themselves and their children later on. I have seen a big girl of sixteen, who, the minute she was absorbed in anything to the point of forgetting herself, promptly put her thumb into her mouth! And I have even known a grown man to have the same mortifying and ridiculous trick, fastened upon him in his babyhood by a short-sighted mother. Think what a real handicap that was! He could never rise to any position of responsibility and dignity with such a habit, for no one would believe that he was quite reliable and "all there." You wouldn't yourself. How far would you be impressed, for instance, by a minister who should suck his thumb in the pulpit while waiting to begin his sermon? Or a doctor who should suck his while studying your case? Or a business man who should indulge himself with a thumb in

the intervals of making out an important contract? This baby is going to be a man some day, and you don't want to put any such preposterous obstacle in the way of his success.

Of course, every one expects to break the baby of the trick when he is a little older. But, dear me! It's a truly staggering task! People dip the little fingers in bitter aloes, and tie up the hands in mittens, and the baby cries and frets and fights until every one about him begs for peace. Then, in some moment of weakness or fatigue, when company is coming, or sleep is much needed, the mother yields; in goes the thumb to the waiting mouth, and the whole battle is to be fought over again, only now against a foe encouraged to still stronger resistance. Any one who has watched such a tedious and prolonged struggle will agree with me that the only thing to do about thumb-sucking is not to let it begin.

MUSCLES AND THE SENSE OF TOUCH

Left to himself, but given opportunity, Baby will get up quite wonderful gymnastics that exercise about all of his muscles that are ready for exercise, thus sending his will along into command of his legs and arms and back. For this purpose he ought to be allowed to lie on his back on the bed, with no clothes on, or on a quilt in the sun, every morning at his bath time, and every night before going to sleep. He will stretch and double and twist and jerk and contort beyond any belief, and to watch him is as good as a circus. Turn him over on his stomach, too, and watch him try to get up on his hands and knees. Thus he gets ready to creep.

MASSAGE FOR THE BABY

When he begins to tire of this, take him on your lap, and rub his little body all over, firmly and steadily, especially down his back. Knead the sweet flesh gently, and then slap it, also gently, with your cupped hand. This is massage

for the baby, and it will bring such a glow to his skin as will lead to a good sound night's sleep, and to firm, well-knit muscles, and to a good circulation. Besides, he will like it. And so will you. Nothing on earth is quite so delicious to the touch as the firm, fine flesh of a healthy baby! In these strokings and kneadings something of your mother-love and magnetism passes over into the baby, and you are more closely bound to each other. Froebel says that the last consciousness of the baby who is going off to sleep, as also his first awakening, ought to be a consciousness of love. Touch is especially the love-sense, and we, who cannot yet make the little children understand our words, can tell them, through our hands, how dear they are to us, and how tenderly we care for them.

CROWING

Very likely this will be the occasion of his first crowing, — such a loud, triumphant shout of joy and of pleasure in being alive! When

it first tears its way out of the little throat the baby himself is likely enough as surprised as we are about it, and shows the whites of his eyes in astonishment. He tries to do it again, but he can't. At first this act, too, is involuntary, but, little by little, he learns to master it, and then he crows away like a little rooster, as he lies kicking and tossing in the sun.

LONG SLEEPS

All these new achievements so excite and exhaust him that now he spends, every once in a while, ten and eleven hours in unbroken sleep. Don't rouse him, no matter how inconvenient you may think the long sleep will make his next feeding time. You want him to get into the habit of sleeping all night as soon as you can, don't you? And each time that he sleeps ten hours is just so much gain in power to sleep ten hours.

By the end of the fifth month the baby ought to have doubled his weight as it was at birth.

CHAPTER VII

JULY

Six Months Old

Now that the summer is fairly upon us, we find a new set of problems in the management of the baby. For one thing, we find that we must put restraint upon ourselves in the matter of hugs and caresses. Dear and enticing as the youngster is, — dearer and more enticing every day! — we remember that the floor is cooler than our laps and eager arms, and we set him there, not among pillows, but on a folded quilt. Every minute that it is possible to coax him to stay there is so much gained.

His baby carriage, in which he may have spent much of his waking time heretofore, we now see to be too hot, — to hold him too closely. So,

when we take him out of doors, we set him right down on the cool grass, and let him sprawl in close contact with the wholesome earth.

When he goes to sleep we hang a baby hammock under the trees and put him in it, with nothing at all under him. To feel the air circulate as much under him as over him is in itself a refreshment. Lace him in with a bright ribbon, swing him hard, to fan him, and he will gurgle himself off to sleep, a contented baby.

The hammock is a good thing for him to sleep in at night, too, because it is cooler than any bed. During the evening, while the family is out on the porch or under the trees, there is no reason why he, too, should not sleep out in the hammock, swathed about with mosquito netting.

If you've managed to keep your milk, now is the time that you will feel repaid for whatever effort that may have cost you. For now you are sure of a food that will not sour, nor disagree. While the poor little bottle-babies are fretting, and throwing up, and losing their appetites, your

wholesome baby goes along undisturbed. Your only difficulty is to keep decently cool and unirritated yourself.

CARE OF BABY'S MILK

But if you have not kept your milk, then you are in trouble, and will be until the end of the hot weather. One thing is sure, — you cannot run the least risk of anything going wrong with the milk. You will have to make sure that it is cool, and not more than twelve hours old, and unjoggled. For we all remember the summer tales of the ptomaine poisonings, due merely to milk that has been joggled on the train during hot weather. The care of the bottle, too, is of the greatest importance; — it must be kept *absolutely clean*, the drops of stale milk not being allowed to stand in it at all. If you cannot wash it immediately, fill it with water in which has been dissolved a little saleratus, — a teaspoonful to the pint or thereabouts, — and let it stand so until you are able to scald it. Drop the nipple also into a cup of saleratus water. In cleaning the

bottles, you will find shot, kept in a cup for the purpose, a great help; but the regular bottle brush may be used if it is kept strictly clean.

STERILIZING

It is good practice to sterilize the bottles at least once a week. This simply means boiling them for about five minutes, having first filled them with hot water. They must really boil for five minutes, counting from the time that the first vigorous bubbling appears. Turn out the hot water, and fill the necks of the bottles with cotton, — using it like a cork. Of course, this is not absorbent cotton, but just the plain variety.

To sterilize the nipples, boil them first five minutes in soda water, and then five more in plain water. Put them in a dry glass covered against the dust, but not against the air, by a piece of sterile gauze.

UNACCUSTOMED FOODS

You will have to be extremely careful not to give the baby a single mouthful of other food

than that to which he is accustomed. All the pleasant little messes which we grown people enjoy on summer afternoons are not for him. He must *not* have a suck of a peach, a squirt of grape juice, a taste of ice-cream; but must be kept strictly to his proved food, and plenty of good, cool, but not iced, water. Bowel troubles are so easily inaugurated during hot weather that it will not do to run the least risk.

I lost a little sister through the failure of a nurse to obey my mother's strict injunctions in this regard. She had the baby with her in the park, and a lady, sitting on the same bench, with her own little children, passed around some baker's cookies. One of them she offered to the young nurse-girl, who did not like to refuse the lady, but allowed the baby to nibble the forbidden cooky. When the child came home she was already in the first stage of dysentery; in three days she was dead. Yet she had gone to the park a healthy, though not vigorous baby.

PRICKLY HEAT AND CHAFING

One of the annoyances of the season is prickly heat, — but although it is an annoyance, it is scarcely more. It can be guarded against by keeping the baby as cool as possible, and as lightly dressed. It can be relieved by putting a little saleratus in the bath, — about a tablespoonful to the small tub, — and by the use of a pure talcum powder. There are many varieties of this on the market, but as a rule the cheap, highly scented sorts are no good. Cornstarch, tied in a little piece of thin muslin and thus dusted over the body, is also good.

Chafing has to be looked out for. When the skin is wet with perspiration the least friction tends to abraid it. Watch, therefore; observe strict cleanliness, be careful that the powder does not collect in the creases, and if, in spite of everything, the chafing does appear, use mutton tallow. There is no remedy quite equal to this simple, old-fashioned one. It is a good plan to keep a lump of tallow in the ice-chest ready for such

an emergency. Or you can get a tallow candle or two, provided you are sure that they are really tallow, unmixed with spermaceti. Having the tallow, melt it, and apply it freely, as hot as it can be borne. The relief is immediate, and cure follows fast.

DRESSING FOR WARM WEATHER

During this warm weather do not try to keep the baby dressed up. Let him sprawl around in just his little shirt and didies. He looks cunninger that way than with skirts on, anyhow. The light shirt is enough to protect him from wandering draughts. Let his legs and feet stay bare. If he goes out where people see him and you are afraid of their comments, slip on the thinnest kind of a muslin gown over this brief attire; but no shoes, no stockings, and no skirts, if you value his comfort!

TOYS FOR THE BABY

More interesting, to a right-minded baby, than any toys bought at the store, are the real things

in use about the house. Many a mother has made this discovery to her cost. Many a baby has strenuously refused to play with his bought toys and insisted in no uncertain tones upon playing with the egg-beater and other useful articles. Who has not seen a bewildered young mother offer her child a rattle again and again, also an ivory ring to bite on, when he was vociferously declaring that the desire of his heart was to play with his mother's bottle of perfumery? If any one has any doubt that a baby has a will, and perfectly definite ideas of his own, let him watch some such struggle as this, and see who comes out ahead!

Now I confess I am an extremist in this matter. Having been badly worsted by three babies in succession, I came to the conclusion that I would not join battle with the fourth, but let him have just about everything he wanted. One of the first things was the coal scuttle, but I did not shrink. I spread out a newspaper and let him have it. He got black, of course, but he enjoyed himself to the full for a half hour. Then

I washed him up and put the scuttle out of sight, and thereafter kept it out of sight. *I* think I was sensible, but some older members of the family, who did not have to take care of the baby, thought I was crazy.

THE RIGHT TOYS

Anyway, the right toys are those that the baby digs out for himself, from such of the household utensils and belongings as can be spared for his use. A bit of chain, some old dominoes, a pair of scissors stuck in an empty spool, a lot more spools, some cards, an old magazine that he can tear, a biscuit-cutter, some little tin dishes, an old purse tasting of leather, a small wooden box with a cover that slides in and out — such are the things that he picks out for himself and that a wise mother will preserve for him. If she provides a table or bureau drawer in which they can be kept, and then lets him pull out the drawer and rummage to his heart's content, she will find him pretty well satisfied with his toys.

For a single object, nothing will give him

much more joy than a bottle with a stopper that he can pull out and put in, unless it is another bottle, with bright red tooth-wash in it, sliding up and down and foaming as he shakes it. The hours that he will spend with these objects look as if they were wasted, except so far as they enable his elders to get to work; but they are not. The psychologists tell us that he is a real experimenter in his play, trying to discover how things work; and his patience and unflagging interest is something that may well teach us older persons a lesson.

Out of doors, nothing is so good as a sand-pile with a pail and shovel. The baby who can only sit up when he is propped will love to sit in the warm sand, in a little nest, and fill and empty his pail, and ply his small spade with wabbly fingers, daily growing stronger with exercise.

FROEBEL'S FIRST GIFT

The first gift of the kindergarten is a ball, in which Froebel saw the symbol of unity. Here, in the sphere, he tells us, all forms lie concealed.

In the class-room the children are taught to make balls of clay; then to pat them into cubes; next to slice off one side and make a square; next to bisect that, and make a triangle, — thus proving to himself that all forms are contained in the form of the ball. But, without needing to do all this, we, at home, can familiarize our children with all sorts of balls, and help them to get endless amusement from them. The kindergarten balls of soft rubber, covered with colored worsteds, with a string attached, make delightful playthings. A grandmother or an aunt can buy seven of these little balls, and, by crocheting or knitting covers of each color of the rainbow, give the baby a really educational present. The colors are used, in Froebel's scheme, to familiarize the child with color before he is fairly conscious of making the discrimination. Or the balls may be bought ready-covered at any kindergarten supply store. They are called, "First Gift Balls," and come in a little box of wood, very strong, with a sliding cover, into which they just fit. The box adds greatly to the interest

and value of the present; for even a baby soon learns to put the balls into it, not to be contented until they fit, and then to slide the cover smoothly home, — a first lesson in order.

TOYS FOR THE BATH

There are a number of toys for the bath, all of them very enticing. There are ducks and fish and a magnet to draw them about. Also celluloid jointed dolls that float. These are excellent, not only in the bath, but outside of it, for they are pretty, light, and strong. The baby can pound their heads and bodies like everything without injuring them. But in the bath itself nothing is more enchanting than a tin cup and a strong bottle or two.

Once we get the idea firmly in our minds that what the child wants is something that he can do things with, — that he cares very little for prettiness, — we shall find ourselves on a trail full of rich surprises. We shall find toys and amusements all over the house, in the most unexpected places; and perhaps we shall begin to suspect

that beneath all the drudgery of housework there is really, if we will but let our babies discover it for us, a playground full of interest.

PROGRESS OF THE MONTH

This month the baby, already well able to express himself, shows more and more plainly what a little individual he is. At the same time he shows how much a member of the race he is, for all his revelations follow along essentially the same lines as the revelations of other babies, — as you will see if you compare this record of him with your own baby's daily blossoming. He is an individual, true; every day proves him possessed of a mind and will of his own; but he is chiefly individual in the use he makes of a machinery that he inherits from the race. It is difficult to remember that we are, every one of us, at once distinct persons, set apart in a little world of our own, and also members of the great human family, moved by laws and dealing with materials which come to us by no act of our own, but bear the stamp upon them of the usage of millions of unknown fellow-beings.

When your baby is hungry, doesn't he turn his head and eyes longingly toward the bottle? Don't his eyes shine? Doesn't he cry when it is taken out of the room? If you offer him the bottle, doesn't he open his mouth before his lips touch it? And if you take it away before he has had enough, doesn't he stretch out his arms toward it? Well, just so act thousands of other babies, six months old. So you acted, and his father, and your mother, and grandmother.

Perhaps he presses a firm little hand against the breast, to make the milk flow faster? Well, so did Preyer's little boy, over in Germany.

Learn a lesson from that baby, and be careful not to sweeten too much the bottle milk, lest, like him, having tasted the sweeter milk, he refuse thereafter to take the breast at all.

EMOTIONS

Now the baby proves that he notices not only your face, but the expression of it; for, if you look at him sternly, he will draw down the corners of his mouth, looking very pathetic;

and if you continue to look stern, he will cry. But if you smile, presto, out come his smiles in response! He knows love, then, and friendliness, and the way these emotions conform your face.

Alas! he also knows fear. There are those who fondly hope that, unless he is taught fear, or given examples of it, or reasons for it, he will not experience the unpleasant emotion. But such persons forget heredity, and the long, savage, half-animal years when fear alone kept man alive. Babies fear without any cause that fathers and mothers can avert; and they fear, oftentimes, perfectly preposterous things. Preyer's boy, for instance, feared suckling pigs. It transpired, later, that he thought they were biting their mother, when they suckled her. But, although no one can keep a child from fearing, a mother can, by being courageous herself, give him both an inherited inclination toward courage, and an example of courage, which will help him to overcome his fear.

STRANGERS

One of the things he shows fear toward, now, this month, is strangers. Almost as soon as he learns to recognize friends he learns also to object to strangers; and considerable tact is needed, right here, to get him past this period without fastening upon him a timid and unsocial habit.

These new persons cause in him unbounded astonishment. He is struck stiff at the sight of one, remaining for quite a few seconds in the attitude he happened to be in when he first caught sight of him — just like children who play "Still pond, no more moving." His jaw drops, he stretches his eyes wide open; for quite a few seconds he does not wink. He is the picture of astonishment, — an emotion which he has scarcely experienced before this month. How fast he must have lived, to have made so much his own the familiar world about him, that the interruption of an unexpected personality should surprise him to such a degree!

GENERAL ADVANCE

Now he not only knows himself well in the glass, but he evidently knows that the faces therein are images; for when, for instance, he sees his father's face there, he turns around at once, as if to compare the image with the reality.

When he is especially delighted he laughs and raises and drops his arms very rapidly — his whole body shaking with joy.

As to speech, he says "oo-goo, ma, oo-e" — and, in pleasure, "ha, brrr." *I* and *u* are yet rare sounds for him, and he has few consonants. He often sleeps six to eight hours at a stretch, and occasionally, as at five months, ten hours.

He ought to gain two thirds of an ounce a day.

As for sitting up alone, Heyfelder says that vigorous children of five or six months sit with the whole of the upper body erect. But R. Demme thinks that children who do this at the end of the seventh or the beginning of the eighth month are very powerfully developed.

Those of moderate strength, he thinks, sit erect during the ninth or tenth month, while weakly children do not manage it until the eleventh or twelfth month. Preyer's baby kept trying and succeeding from the sixth month on. During the sixth month, too, he raised himself to a sitting posture, in order to look after his father. But he could not sit alone, permanently and steadily, without any support at all, as in the bath, until the forty-second week. How is it with your baby?

CHAPTER VIII

AUGUST

Seven Months Old

A great deal of very unnecessary warning, as well as a great deal of wasted sentiment, has been uttered on the subject of the mental attitude of the mother and its effect on the child. Most of it is, indeed, confined to the effect of the mental attitude of the mother upon the unborn child. There are gossipy tales of the country fireside in regard to snake marks, children that bark like dogs, harelips, and other such deformities, brought on, according to the gossipers, by some sudden fright of the expectant mother. There are also the idealistic imaginings of certain Mothers' Manuals in regard to the effect on the unborn child of beautiful music and pic-

tures and sermons and emotions. But as to all of these things, the real truth is that no one has yet been able to prove that the mental attitude of the mother while the baby is yet carried under her heart has any such immediate and marked effect. Such changes as seem to occur as the result of shocks, of fear, of sorrow, are apparently the result of a change in nutrition; the mother's organism, itself depleted by painful experiences, failing to furnish the embryo with the amount of food necessary to its complete development.

EFFECT OF MOTHER'S EMOTIONS

But when the baby is actually born, the effect of the mother's mental attitude upon the child is more easily established. Even before he is able to imitate her movements he seems to be unusually sensitive to her moods. Nor is this sensitiveness confined merely to changes in the milk he drinks, for it is apparent in bottle-babies. Who, that has ever tried to put to sleep a baby when herself in a great hurry and anxious to get

away, but has experimentally made sure of the truth of this observation? The baby who ordinarily goes to sleep without any trouble at six o'clock in the evening persists, on the evening when there is going to be company, in staying wide awake until after seven. He seems to feel the quivering wakefulness of his mother, no matter how quietly she sings or how carefully she darkens the room.

Not only in this familiar instance, but in dozens of other ways, we may see clearly that the baby, long before he understands his mother's speech, knows her moods almost as perfectly as she knows them herself. I knew of one baby of about ten months of age who was seized with an unaccountable illness, was dejected, drooping, and finally almost died. It was not until another woman, herself healthy and happy, took him to nurse with her own baby that he recovered tone. Later it was found that there had been, during all the period of his illness, serious trouble between his father and his mother, trouble which finally culminated in a permanent separation.

It is, then, of more true importance after the baby is born that the mother should keep herself as nearly as possible serene and wholesome and happy, than before his birth. When she finds herself out of sorts, angry, or restless, or sad, the best thing she can do for him is to take herself out of the way as if she had the measles or some other communicable disease, and hand him over to some happier person until she has regained her own balance.

When a mother once sees the importance of her own serenity and good humor to the welfare of her children, she will surely know that she has no right to allow exigencies of housekeeping, or of spring sewing, or of worries about what the neighbors think, or any other of the worries in which we sometimes flatter ourselves we have a right to indulge, to take the place of one of her first duties, — the duty of keeping herself happy. She has a right to ask her husband and her friends to contribute to this good end because her happiness is not for herself merely, but for that of her family, and she is under obligations

to throw away forever that morbid love of martyrdom, that constant demand for sympathy as an overburdened human being, which lurks as a temptation in the minds of the sanest of us.

THE FIRST TOOTH

This is the month in which normally the first tooth makes its appearance. It is usually one of the two middle incisors on the lower jaw; but it often happens that it is some other tooth; rarely, however, a double tooth. Although this sign of irregular dentition is of slight importance, it should be enough to make the mother watch for other signs of irregularity. For the more perfectly and evenly a child's teeth put in appearance according to rule, the stronger and better are the teeth likely to be. If the dentition is very irregular, that is, if the teeth come too early or too late, or after an unusual order, it is well to consult a physician. He may then prescribe calcaria or the addition of lime-water to the baby's milk, or some of the bone-building foods.

Some young mothers are so unaware of this fact as to be glad when they see signs of a coming tooth, say in the third or fourth month; but it is not a good thing for a baby to cut his teeth too early. It takes his strength, and he is likely not to have enough lime in him to make good, durable teeth.

It is even more undesirable that the first tooth should appear much later than the seventh month. That is an almost certain sign that the baby's food is not nourishing him sufficiently. Not only is he having extra hard work in getting material for his teeth, but it is very likely that his other bones are not being built with proper firmness. Late dentition is one of the first diagnostic signs of that dread disease, rickets.

HELPING IT THROUGH

The coming of the first tooth makes itself known by the swelling and soreness of the gums, by drooling of the mouth, and by a constant desire on the baby's part to bite on

something hard. This desire should be gratified in all possible ways, thus helping the sharp little bone to cut the skin of the gum. A baby who is quite fretful with teething will be considerably soothed if the gums are firmly rubbed several times a day.

Lancing is rarely indicated. Indeed, one may say never indicated with the front teeth, though sometimes it is necessary when the double teeth come through. If the gum is lanced at a wrong time, the cut will heal up again and form a scar. This is much harder than the simple skin of the gum itself, and increases instead of relieving the difficulty of getting the tooth through.

The time-honored method of proving that the first tooth has indeed arrived, is to move over the baby's little red gum a silver thimble. A young mother with her first baby never forgets the little thrill of joy which goes through her when she hears the rattle of the bony tooth upon the metal of the thimble.

PROGRESS OF THE MONTH

The seventh month proved to be the first month in which Preyer could make sure that his child imitated him with deliberate intention. He had been watching carefully to make sure of this fact because the first act of imitation is a proof, first, of the existence and activity of the cerebrum, and second, of the presence of a personal will in the young child. He used as a basis of his experiments the simple act of pursing the lips, an act which the baby performed involuntarily upon the fourth day of his life. Many times after that the father pursed his lips and tried to induce the child to do likewise, but although he did so a number of times there was no certain success until the seventh month.

SIGNS OF PLEASURE

At this time, too, his child laughed back at any one who laughed at him, and so do almost all babies. But this laughter is not

an indication of joy, but is, like the pursing of the lips, pure imitation. But crowing, with considerable abdominal pressure, is a true sign of joyful emotion and may be observed now.

In this month his child listened to singing, with his eyes attentively fixed upon the face of the singer, and a band of music occasioned him such pleasure that he cried out.

He was pleased, too, with his own image in the looking-glass, which up to this time, we have observed, awoke interest mainly. The child is yet too young to care very much for the ticking of a watch, or for the sight and touch of pet animals.

Now, perhaps you have noticed that up to this time your baby's nose was immobile. To be sure, in difficult breathing, or in snoring, and sucking, the nostrils have moved a little, but this was quite involuntary. No matter how many queer faces Baby made, screwing his mouth about, wrinkling his forehead, rolling his eyes, and shutting his eyes, he never moved his nose; but now, in the seventh month, he gains control of that little organ.

Now may be heard his first sighs, emitted generally when he is lifted from his crib or raised to a sitting posture from a recumbent one. They are not at all signs of sadness, but mere long respirations. He often sighs when he is quite contented.

When he is sitting on his mother's lap he sometimes pulls himself to his feet, holding on to her tightly, but he is not likely to attempt this feat in any less safe and sheltered place.

SIGHT

As to his eyes, the accommodation is now perfect, although he cannot yet distinguish certain colors, such as blue and gray and violet. He sees form and other colors with perfect distinctness. This is shown in the fact that he regards strangers with an expression of almost petrified amazement, showing that he sharply distinguishes between strange faces and those to which he is accustomed. That is, the image upon his retina must be very clear and sharp. Indeed, long before the thirtieth week,

healthy children distinguish the faces of those about them. They know first the face of the mother, next that of the nurse or grandmother who holds them most, then that of the father. Faces are the first thing which the human eye clearly perceives. As Preyer says, human forms and faces, being large, moving objects, awaken interest more than other objects do; and on account of the manner of their movements, and because they are the source from which the voice issues, are essentially different from other objects in the field of vision. "In these movements they are also characterized as a coherent whole, and the face, as a whitish-reddish patch, with the two sparkling eyes, is always a part of this image that will be easy to recognize, even for one who has seen it but a few times." (Helmholtz.)

MEMORY

Hence the memory for faces is established earlier than that for other visual impressions, and with this the ability to recognize members

of the family. A little girl, who does not speak at all, looks at pictures with considerable interest in the seventh month, "and points meantime with her little forefinger to the heads of the human figures." (Frau von Strümpell.)

Memory is not very long, although it varies greatly in individuals. Preyer's child at seven months did not recognize his nurse after an absence of four weeks, but another child at four months missed her nurse who had been gone only one day, looked all about for her, and after each vain searching cried bitterly.

SPEECH

Now the child has already increased his repertoire of sounds. His screams, even, which in this month are apt to be loud and prolonged, have a greater variety of sound and give more exercise to his coming powers of speech than heretofore. He says: "mä, ä, ü, ä, ŭäĕ." And when he is contented, "ooroo." But when he wants anything very badly he will scream himself hoarse in the effort to get it. When he is hun-

gry he draws his tongue back, broadening and shortening it when screaming, and makes loud expirations with longer or shorter intervals between. But in pain the scream is high, piercing, and uninterrupted. In the midst of his crying one may sometimes distinguish the rare consonants *l* and *t*. Often he says *b*, *d*, *m*, *n*, *r*, *g*, and *h*. He achieves *k* only when he yawns, and says *p* occasionally both when he is crying and when he is engaged in friendly prattle. You will note that by little and little the child's organs of speech are being practiced in all the elements of speech, which he will combine later on when he comes to form words.

TEMPERATURE OF BATH AND BOTTLE

It is evident that the very young children dislike to be wet anywhere, especially with cold water. They are apparently much more sensitive than are older children to the local withdrawal of heat; therefore they object violently if their bath is below a certain temperature, although when they grow older they may be

trained to overcome this fear of cold water by experience of the refreshing after effects. In regard to this feeling for temperature, individual children vary greatly, and it is not therefore practicable for any one to lay down an absolute law as to what should be the temperature of the baby's bath. The only safe rule is that it should be as cool as it can be and yet be agreeable to him, and that as time goes on it may be made a very little cooler every day. Preyer's boy allowed his bath to be cooled to $32\frac{1}{2}°$ C. (89.7° F.) without making any objections, but at $31\frac{1}{4}°$ C. ($88\frac{1}{4}°$ F.) he invariably cried, no matter how gently they added the cold water. But by the time he was two and a half years old he allowed the water as cool as the air of the room he lived in, that is, so cold that it had formerly made him cry, and at four years of age he objected to a warm bath at 36° C. (96.8° F.). When he was first put into the water he always became pale, but was all right in one or two minutes. This was a case not of the immediate effect of cold upon the capillaries, but a vaso-

motor reflex, as was shown by the fact that the face, which was not wet at all, was the first to show the pallor. He gave this undoubted sign of the organic sensitiveness of the young child to the cold until he was two years old.

In the same way the child is exceedingly particular about the temperature of the milk which he drinks from the nursing bottle. This should be as nearly as possible the temperature of the milk as it comes from the mother's breast, about 37° C. (98.6° F.), yet they can by degrees be taught to drink milk, then water, at about the temperature of the room.

CHAPTER IX

SEPTEMBER

Eight Months Old

There used to be quite a superstition as to the baleful effects of night air. One might almost have thought to hear our grandmothers talk that night was a time when it was safer to suffocate than to breathe. Probably the notion had its origin in the early days of the country when the undrained swamps gave forth malaria (which is itself now known to be due to the bite of a certain mosquito), and made it unsafe to be out of doors after sundown. This condition has now been remedied in almost all parts of the country, and there is nothing to be dreaded in night air more than in the air of the day. We need only to be careful that the sleeping body, which has

less power of resistance, is not exposed to undue currents of air, producing too rapid evaporation.

Even on warm nights, therefore, it is necessary to keep the baby covered if only with a light knit shawl. He must also be kept out of the way of draughts, for draughts, as you know, dry the surface of the skin and produce evaporation so rapid as considerably to lower the surface temperature of the body.

SCREENS

In order to give the baby the benefit of plenty of pure fresh air without the harm of direct air currents, screens are most useful. A few years ago these were both expensive and flimsy, but now good strong ones, designed especially for nursery use, may be had for little money. If the man of the house is handy with tools he can easily construct one himself. What is required is merely a rectangular frame of wood, set upon a standard sufficiently wide to keep it from easily toppling over; or a folding screen may be constructed of two or three such rectangles hinged together, and standing upon their own bases.

These screens may then be covered with building paper, and upon this be pasted bright-colored pictures which will interest and amuse the baby; or it may be covered with colored burlap or cretonne or chintz without any decoration. A small-sized folding clotheshorse may be used as the basis for such a screen if the man of the house cannot be induced to make a special frame. But the clotheshorse is usually a little wide for one breadth of cloth and is not so graceful in its proportions as a frame made for the purpose.

DRAUGHTS

Out-door breezes are in some subtle way different from draughts. Perhaps it is simply because the air is purer and warmed by the sun. But even they should not be allowed to blow directly upon the baby when the temperature is less than 95°. Choose for him some sheltered corner where the air is fresh because the breeze is stirring just outside, but where the currents do not strike upon him.

Within doors look out for the draughts along the floor, especially during these cool nights and

mornings. When the baby is put down on the floor, see that he has a quilt under him and that it is placed in some corner out of reach of air from either door or window. Some fond parents have built for their baby's use a platform on casters, the platform being about five feet square. A railing about a foot and a half high still further protects the baby upon it. The platform can be pushed about and set anywhere, and the baby upon it, his thick quilt under him, and his toys all about, is safer and happier than any king upon his throne.

TOO MUCH ATTENTION

Young trees, young plants, and young children require plenty of room. Just as a little plant growing under the leaves of a larger and stronger plant fails to get its full share of nourishment, and if it is not transplanted to some freer space droops and withers, so a very young child, set too constantly under the shadow of grown-up human beings, pines for his own proper freedom and space. It is true that he cannot yet maintain

himself alone, and that therefore he must have within constant reach some one who can attend to his many wants; but, nevertheless, he needs to be let alone almost as much as he needs to be cared for. The first grandchild in a large family is apt to be particularly unfortunate in this respect. His many relatives positively crowd him out of breathing space. A weakly child grows nervous under the affliction, and a strong one obstreperously rebels.

A STRUGGLE FOR INDIVIDUALITY

There was one sensitive, high-spirited little boy who went through the first two years of life with a perpetual defiant scowl upon his face, brought there by this effort to keep free from invaders the boundaries of his struggling personality. He was the only child in a large family. Everything about him offered continual temptations. They wanted to kiss him, to hug him, and to play with him all the time. His mother protested against so much attention, and each of the family thereupon began to force himself to

resist temptation. After letting the baby alone say a dozen times, it seemed no more than fair to have a good frolic with him the thirteenth time. Each one felt that he had been not only moderate in his demands, but abstemious, yet all put together, they made a constant and wearing drain upon the child's vitality. He was five or six years old before he recovered from this treatment, and even then he was more nervous and less friendly than he ought to have been.

KISSES AND HUGS

A wholesome, happy, fat, healthy baby is indeed a temptation to every one who loves him. No one — not even his mother — gets from him as many kisses and hugs as she wants. But we must always remember that such caresses please us more than they do him. As a rule, he endures rather than enjoys them.

In spite of his charm and attractiveness, we must force ourselves to give him, every day, plenty of chance to live alone with himself; to gurgle and coo and roll and bite things, and

blink at the ceiling, and play with his own little fingers and toes, and practice all sorts of other enchanting accomplishments without an audience. If we really have to take a peep at him now and then, just to see what he is up to, let us do it so secretly that he will not suspect it.

INTERRUPTIONS

Above all, let us not interrupt him in his play, for, as we have seen while watching his progress month by month, in all these activities he is really gaining possession of his own faculties and acquiring knowledge of the outside world. We do not know what chain of thought and feeling we may be breaking when we pick him up for a moment's kiss and put him back again. Every such interruption is a break in his process of growth. Only when he begins to fret for attention should we give it.

Yet this does not mean, of course, that we should in any way neglect him, or keep away from him outward and visible tokens of that abundance of love which our hearts yearn to

bestow and on which he thrives. There are times in every day when he is glad of love and cuddling, — all the more so if the day has had within it quiet, empty spaces. And these times are for our opportunity. We can then love him to our heart's content without interfering with the freedom necessary for his individual growth.

PROGRESS OF THE MONTH

We have seen how in the month before this, the eighth month, the child became gradually aware of his hands, interested in them, and able to use them. Now he discovers his feet and sometimes other parts of his body also. He does not yet seem to know, however, that they are parts of his body, but regards them merely as interesting, movable objects within easy reach. He likes to put his legs straight up in the air and examine his little toes. Grasping the foot firmly with both hands, he carries it safely to his mouth. In doing so he sometimes misses his aim and puts the toe into his ear or his eye instead! But

although this surprises him, it does not discourage him: he merely tries again.

After human faces, which interest him most of all, he is, if he is fed from the bottle, interested in all bottles. He associates them with the pleasure he is receiving from the nursing bottle, and his eyes shine and lips protrude at the sight of one.

FALLING OBJECTS

Now, in playing with him, a curious thing may be noticed. He may be much interested in a plaything, say a bit of bright feather or a piece of paper, but when he lets it fall he does not look after it, nor seem to have the least idea where it has gone to. He has not yet made the discovery that objects unsupported fall to the ground. This fact each human being has to discover for himself, and the eighth month is the time usually taken for the discovery. As the month advances, it may be seen that if the object moves *slowly* downward, as a feather does, he follows it with his eyes; also if it makes a noise when it hits the ground he looks at it. But it takes many such

experiences to convince him that when he lets go of that which he is holding it will surely fall to the floor unless something interposes.

His language of desire and interest is becoming plainer and plainer. He protrudes his lips when his attention is held ; he reaches out his hands in the effort to grasp innumerable things that interest him.

He has laughed before, but purely from imitation. In this month he laughs genuinely and loudly as an expression of joy. Any one who hears him knows that he is gay and full of life. The two things that delight him most are friendly faces and singing.

LEARNING TO KISS

Up to this time he has gone through various little lip performances which the proud mother has called kisses. But, as a matter of fact, he has been and is yet quite unable to kiss any one with intention. Not only that, but he doesn't like either to kiss or to be kissed except as through warm contact of his mother he is assured

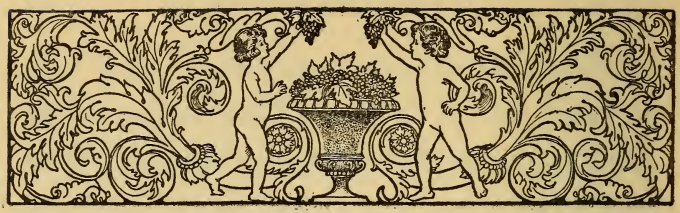
of her comforting presence. Kissing is a late acquirement. It is not inherited and there are many nations which do not know it or practice it. Therefore it is not an instinct with the child, but is a conventional sign of affection which has to be slowly acquired. Preyer records that on the eleventh day, when his little boy "was kissed by his mother on the mouth, the baby fairly seized one of her lips with his and sucked it as if he had got the breast, putting out his tongue." But when he was thirty-two weeks old he no longer sucked at the lips he was kissing, but licked them, as he licked everything else that pleased him. He learned then not to resist the attempt to kiss him, but he gave no particular response, although in other ways he showed that he felt affectionate. It was not until he was three years old that he gave genuine spontaneous kisses as an expression of gratitude and good will. Preyer sums up the situation thus: "At first, then, the lips of the mother, when she kisses her child, are treated like the finger held to the mouth, or like the breast, as objects to be sucked;

then they are licked, as by a puppy; next, the kiss is endured; further on, it is refused; soon afterward it is awkwardly, and only on request, returned; and, finally, it is spontaneously given as a sign of thanks and affection — and this by a boy who is not in the least tender and is not trained."

SPEECH

By this time the child has practiced himself somewhat in almost all the elements of speech. He has made all the sounds which he will afterward use in his speech, and even more than these; but still he cannot reproduce any of them purposely. They have all been made not intentionally, but at random. He repeats them because he likes to practice such sounds, not aiming to make any particular one, but just moving his lips and tongue and his vocal chords in all sorts of ways, and experiencing the results with pleasure. Some observers have supposed that he made in these early months only those sounds which were least complicated and most easily produced, but the fact is that he even achieves

quite difficult sounds; sounds such as in later life, when he tries to learn a foreign language, he finds most difficult of imitation. And it must be clearly understood that he just happens to make these noises in the general exercise given to all his speech organs and in their remarkable flexibility at this early stage. He cannot reproduce even simple sounds by imitation with any certainty. For instance, he tries to say Papa, and succeeds only in saying Ta-ta, and this in spite of the fact that he perfectly well distinguishes the difference between the two sounds. That he does so distinguish is shown by the fact that he understands the difference in the words when they are spoken to him by another person. He knows what to look for when he is told that papa is coming. He turns his eyes and his body toward the door when any one asks him if he wants to go Ta-ta. But within his brain the association-paths between sounds heard and to be reproduced have not yet been so clearly marked that his nervous energy can traverse them with certainty.



CHAPTER X

OCTOBER

Nine Months Old

Even before the baby is nine months old, he has already proved his ability to raise himself on to his hands and knees. These movements have probably appeared first in the bath, because then he is free of the weight of skirts and clothing, and the water itself helps to hold him up. But by the time he is nine months old, if he is a vigorous child, he is probably making active efforts to creep about on all fours. This makes him so dirty, and is so hard on his clothes, that many mothers discourage it. Nurses especially feel that the creeping child is much harder to take care of than the child who can be peacefully confined

to his crib or baby carriage. For, as soon as the child begins to creep about, the floor must be looked after and freed of all objects which could in any way hurt him. Pins and tacks and pieces of colored paper, even threads, have to be guarded against, or the inquisitive baby, who puts everything into his mouth, will be sure to get them.

INCONVENIENCES OF CREEPING

Besides these really harmful objects, there are some other things which disturb the mother's sense of pride in her hitherto clean and kissable youngster. He shows now, for instance, the most uncomfortable determination to play with the coal scuttle. As soon as he can creep, or even hitch about on the floor, he makes a bee line for that black object, and, unless deterred, sucks away at each piece of coal as if it were a chocolate cream. Imagine then the state of his white dress, and of his hands and face!

Creeping, moreover, is very hard on the

baby's clothes. He wears out the knees of his stockings, and scuffs out the toes of his shoes. His dresses become so dirty that they have to be fairly worn out by rubbing before they can be made clean. All these things are real annoyances incidental to the creeping period, and unless the mother is so well-informed and intelligent that she knows the compensating advantages of the period, the baby is likely to be considerably restrained in his natural activities. But there is another side to the question. Most of the difficulties here enumerated can be overcome by clothing the child properly. But such as remain must be endured if we want to have the child develop as Nature intended that he should.

IMPORTANCE OF CREEPING

On this subject Preyer remarks: "Creeping, the natural preparatory school for walking, is but too often not permitted to the child, although it contributes vastly to his mental development. For liberty to get a desired object, to look

at it and to feel of it, is much earlier gained by the creeping child than by the one who must always have help in order to change his location. Mother and nurses in many families prevent children from creeping before they can stand, through mere prejudice and even superstition; even when it is not the convenience of the elders, it may be their disinclination to observe watchfully the freely-moving child that determines the unjustifiable prohibition. It cannot be a matter of indifference for the normal mental development of the child not yet a year old whether it is packed in a basket for hours, is swathed in swaddling-clothes, is tied to a chair, or is allowed to creep about in perfect freedom upon a large spread, out of doors in summer, and in a room moderately heated in winter."

AN AMUSING DIFFICULTY

The baby encounters a difficulty which is at first most amusing to the onlookers, but which presently becomes tiresome even to

them. As for the little fellow himself, he becomes perfectly enraged. The trouble is this: his arms are so much stronger and better developed than his legs, that he pushes himself backward instead of forward. The harder he tries to go toward a desired object, the more rapidly he scuttles away from it, scolding and fretting all the time. Some patience on the part of the mother is here required. She will have to get down on the floor with him, and put her hands behind first one little pushing foot, and then the other, until he gradually grows strong enough to make his knees do their proper work. Sometimes it takes almost a week to teach a baby to go forward instead of backward, and it is partly because few women take time so to help the baby that he learns to get around the difficulty himself by various procedures. Sometimes he gives up trying to use his hands and legs at all, and hitches about over the floor in a sitting posture; or he uses one knee and one foot; or sometimes both feet, scuttling about with his hips

raised considerably higher than his head. There is nothing very harmful about these rather awkward procedures. They at least attain the chief object of permitting the child to move himself in the direction of whatever he desires. But they are not as graceful a means of locomotion, nor as well suited for the harmonious development of all the body muscles, as is the ordinary creeping on hands and knees.

About the same time that the baby begins to creep he shows a strong proclivity for climbing, and this, too, has occasioned much anxiety to mothers, who like to have their children keep to safe and limited fields of experience. The stairs especially attract the young explorer, and to prevent him from using them all sorts of gates and guards have been invented.

THE STAIRS

But the truth is that his attraction to the stairs, like most other spontaneous attractions, is a sign that they are good for him. He needs to climb and to stretch in this way certain

of the trunk muscles which are not sufficiently exercised in creeping on a level. Instead of trying, then, to prevent him from this exercise, suppose you take an hour or two off some morning and show him how to creep up and down stairs with safety. This needs to be done just as soon as he shows a desire to climb the stairs, because if he is thwarted in his first efforts, he will get so excited and eager when he is finally permitted to try that he will no longer be in a teachable condition.

This is the way to teach him: start him at the *top* of the stairs, kneeling two or three steps below him; pull down one little leg until the knee rests upon the step; then pull down the other knee, and thus show him how to go down feet foremost. Every time he starts to turn around and go sideways restrain him and put him straight. It will be easy to do this in a playful and loving manner that will not rouse his ire. After he has gone downstairs in this fashion, say a dozen times, the habit will be pretty well formed. The point is never to

allow him to form the opposite habit of turning on the step. If he shows a strong tendency to do so let him turn and fall while you are there to catch him. But see to it that he bumps himself a little — enough at any rate to make him cry, and be undesirous of repeating the performance. Once he has been taught to go down in this way, he is perfectly safe on the stairway and will spend joyous hours there.

Think of the increase in the territory over which he is now master! Instead of one little room or the places which he could see from his mother's arms or his perambulator, but which he could not explore by his own initiative, he now has practically the range of the entire house. He is likely to pop his little grimy, interested face into the parlor or the kitchen at the most unexpected junctures. But then, dirty, or not, isn't he a welcome visitor?

CREEPING CLOTHES

Now we have to give up the attempt to keep him dainty, and confine ourselves to considering

strict utility in his clothing. Only on company occasions and for a brief half hour at a time will he be able to wear the delicate little white dresses, in the fashioning of which we have taken so much pride. Now, from morning till night, will he disport himself in the dark blue overalls which proclaim his kinship with the world of laboring men; and this is well, for, after all, this young son of ours is not going to be a lily of the field, clothed upon with perishable glory, but a member of the toiling, sweating, useful, and, on the whole, pretty happy human family.

In order that the child may freely enjoy the creeping period and at the same time bring as little annoyance as possible to his mother, he must be clothed with an express eye to the nature of his activities. The best creeping clothes are probably the little dark blue overalls just referred to. The legs are made very full and baggy, and drawn in at the knees with an elastic band. They are, in short, much like a pair of Turkish trousers. Dark blue German calico, which is heavier than the American calico,

is the best material of which to make them. They are cut in two pieces after any ordinary trousers pattern, stitched up at the seams, and hemmed with an inch-wide hem around the waist and the knees. A narrow flat silk elastic (not round) is then run into these hems. Silk elastic is preferred because it is more flexible than the cotton and does not bind the legs and waist so tightly. This little garment may then be drawn on right over the baby's skirts, when the waist elastic will fasten it securely in position.

WAISTS AND SLEEVES

Some of the ready-made creepers have a bib like an overall bib, and this has the advantage of holding the garment more securely. It is, however, more troublesome when the baby needs to be changed.

But the baby's sleeves and arms get very much soiled, too. Therefore it is well to make him a little loose, long-sleeved jacket of the same blue material; or, if it be summer, of the lighter weight American calico. Some mothers put

sleeved bibs on their babies during feeding time, and these bibs (which also can be bought ready-made) may be substituted for the jacket. The point is to cover the sleeves and the front of the dress as well as the skirts.

If the trousers are made amply long and full, so that there is a generous bagging at the knees, the stockings will not be worn out at the knees, nor will the creepers themselves give out here as soon as they would if the material were scant over this region. It is a good plan, however, in making up the garments, to stitch a square of goods on the wrong side just over the knees.

SHOES

The shoes bought for the baby's use during this period need to be of fairly strong leather. Here again daintiness must give way to utility. The constant dragging of the feet along on the floor wears through the toes of delicate kid shoes within a week. Something can be done to protect them by making a pair of little slips of the blue calico. These are practically little pockets

which cover the toes of the shoes. They are held in place by a strap of elastic passing round the back of the heel, after the fashion of a woman's slip rubbers.

When the baby is thus dressed, it is evident that there is not much use wasting elaborately made dresses and skirts upon him. Indeed, the more clothing he has on the more awkward he looks and feels. He needs, however, to be warmly covered, because he is now exploring all sorts of draughty places. This is best accomplished by means of a thick little shirt and a flannel, long-sleeved gown. If he has enough flannel nightgowns, he can just wear one in the daytime and another at night. By this means each one has an opportunity to be well aired, while he himself lives continually in loose, warm garments. If he is dressed according to the Gertrude plan, advocated in this book, his long-sleeved flannel petticoat with the corresponding undergarments will be exactly right for him. Otherwise, of course, he will need to wear a warm knitted skirt under his flannel gown.

As for his legs, now so continually in contact with the cold floor, they must be especially warmly clothed. For this purpose he will need to wear woolen stockings, and a certain curious kind of under-drawers with the seat cut out. They are fastened at the hips by safety pins to the undershirt. A little square of cotton cloth needs to be stitched on the shirts at each side to take care of this pin. The illustration here gives the shape of the little leglets, which serve as under-drawers for the creeping baby.

ONE LEG OF UNDER-DRAWERS FOR CREEPING CHILD

Thus protected, he is safe from any but the most outrageous draughts. For one thing, his active exercise itself keeps him warm, and in condition to throw off any harm which might overtake a less active youngster. He is armored now for business, and just watch the

joy with which he goes about it. If we could only retain his zest for activity, his untiring interest in everything about him, and his delight in his own activity, how nearly we should find even this commonplace old world like the kingdom of heaven!

PROGRESS OF THE MONTH

At last, when he is nine months old, the baby can turn over in his crib. Now, this is a most useful accomplishment, because until he attained it, it was not safe to leave him unwatched. Many cases have been reported where children unable to turn themselves have smothered to death in their own cribs. Therefore it is a blessed relief to know that now, in all probability, our baby can extricate himself from any such dilemma. To make sure of it, let us turn him, when he is asleep, over on his face and watch results. If he manages to struggle back to a more comfortable position, we shall know that he is safe, even when left alone.

Last month we found that he laughed a full,

joyous laugh. This month we find he delights in striking his hands together and then laughing at his own accomplishment.

He is also more and more interested in whatever goes on about him. His observation is more definite, and he has a greater body of experience against which to contrast his present experiences. Just as he used to watch bottles with delight, so now he is specially interested in all sorts of boxes, especially those that look like the talcum powder box from which he has derived so much satisfaction. All new objects he regards attentively, and he watches the doors as they open and shut.

SENSITIVENESS TO NOISE

His sensitiveness to noise is very great. Perhaps at this period, when he is usually teething, it is even greater than at any other time. This is shown in the fact that a loud bang causes a number of reflex motions. A sudden noise of this sort will, for instance, cause him to throw up his arms in his sleep, although the sleep itself

is not broken. Preyer reports that his child slammed down the cover of a large caraffe. Each time he winked and jumped, but, nevertheless, his pleasure in the new sight and sound, and in being able to make the exciting thing happen, kept him slamming it over and over again.

A practical corollary to be deduced from these facts is that now we shall have to be even more careful than before of the baby's sleeping time. He will need to be in a very quiet room, and as far as possible all noises must be kept from him. For these nervous actions, while not harmful in themselves, nevertheless exhaust to a certain degree his nervous vitality, and prevent his getting fully refreshed from his sleep at a time when he particularly needs it. Preyer reports that at this period even a loud word sometimes brings on winking, fright, quick breathing, screaming, and tears.

EXPRESSIVE MOTIONS

Our youngster has now acquired a new range of expressive motions. He shuts his eyes with-

out screaming, but with a frowning brow, whenever he has to endure something disagreeable, such as an older person rubbing an inquisitive finger over his gums in search of teeth. He often expresses desire by a peculiar cooing sound with his mouth tight shut. This is sometimes accompanied by an outreaching of the arms and hands, and its meaning is perfectly evident even to an uninitiated outsider.

Although he cannot yet speak a single word, he understands many words, and proves this by his actions made in response to a question. When he is asked, "Where is the light?" he turns his head toward it. Or, "Where is bow-wow?" "Where is papa?" etc. Many children also at this stage are easily taught to point out their own eyes, nose, and mouth.

At the same time he is evidently steadily moving on toward the time when he will be able to speak. His voice is becoming more modulated. Even his screaming is less monotonous, and it is quite easy to distinguish whether he is screaming from pain or anger or fright.

Whatever sounds he makes are accompanied by gestures and expressive movements of his features. Preyer's boy said "ma—ma, am—ma" whenever he wished to express pleasure; also "a—pa, a—cha" and "ga—an—a"; and most children use the same or closely allied expressions. The inexperienced and proud young mother and father are likely to think at this stage that their young son is really saying mamma and papa with full appreciation of the meaning of those words; but they are probably mistaken.

FEAR

Those persons who think that children who are never taught to fear, and who never see persons around them exhibiting fear, will themselves be fearless, have to prove their contention against considerable difficulties. The baby in this early stage already shows unmistakable symptoms of fear of so irrational and absurd a character, as measured by adult standards, that it cannot have been acquired as a result either of deliberate teaching or of imitation. For in-

stance, many children are at this stage much afraid of dogs; and Preyer reports that his little son screamed violently on seeing some young pigs suckle their mother. It turned out, later, that he thought they were biting her. For a long time afterward, even after he was able to talk, dreams of biting pigs evidently occurred to him, for he would cry out in his sleep, "Go away, pig!" A little girl was similarly afraid of doves; and I remember my own little son being much agitated over a chimney hole high up in the wall of an attic room. Preyer concludes that fear and courage are unequally distributed among children; are often quite independent of training. He thinks also that they are hereditary and constitutional. On the whole, he is sure that courageous mothers tend to have courageous children. But it is always possible that the child may inherit from the other side of the house or from ancestors farther back, and so prove himself the timid child of brave parents. I think myself that Jack London is quite right psychologically when he points out, in his story

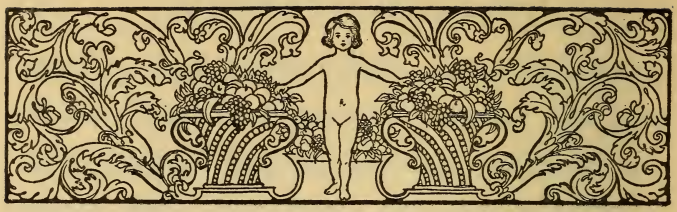
of pre-historic man, *Before Adam*, that fear was originally necessary to man, it being the chief means of keeping him on guard against the manifold dangers that beset him. The useful faculty has by now become so ingrained in human nature that it crops up still in our children.

This is the period when the child begins to creep. As we have seen, it is a most important stage educationally, and the activity should never be checked.

STANDING ALONE

Many children now stand for a moment by a chair or a table, sometimes even without support. If they are much urged they may even begin to walk a little, but much early exercise of the as yet undeveloped legs is by no means desirable. It is much better for the child to creep, deferring walking until his legs are thoroughly strong.

The average weight of the nine-months-old baby is seventeen pounds. He has already got his lower middle front teeth, and about this time the upper front teeth put in an appearance.



CHAPTER XI

NOVEMBER

Ten Months Old

The first language in child and savage alike is gesture. This is aided by half-articulate cries which, as time and the child's intelligence progress, become more and more articulate and definite in their meaning. The six-months-old child, for example, tugs at the front of his mother's dress when he is hungry. After a little he holds out his arms to be taken, or reaches out toward something that he wants, waves bye-bye, and still later on points out his own eyes, nose, and ears when asked to do so.

There seems to be a universal sign language which, at least in its elements, is common to all peoples. Thus, the savage of North America

and the untrained deaf-mute can understand each other when speaking in gestures. This fact is often made a basis for the widely spread teaching of the so-called sign language to deaf-mutes. But the argument is fallacious, because the gesture language which the deaf-mutes and savages have in common is not the same as the highly conventionalized language taught in most of our state institutions. In the latter, for example, the drawing of the thumb down the cheek is the sign used to mean woman. This comes from the fact that the conventional sign language originated in France, where the women wear caps. Drawing down the thumb is meant to signify the cap string as it passes over the cheek. But it may readily be seen that such a gesture would be void of significance to an American Indian or to any other race whose women do not wear cap strings.

LIMITATION OF GESTURE

The difficulty with gesture is that it is limited in significance. In the nature of things it must apply to objects and to animal-like desires. It

does not lend itself well to ideas of God, and of abstract right and wrong. Therefore, deaf-mute children who are restricted chiefly to the sign language rarely progress beyond a limited range of ideas. This is one of the strongest arguments for the teaching of speech to such children. It is not usually known that all deaf-mutes, not feeble-minded and in possession of sound organs of mouth and throat, may be taught speech. The difficulty is merely that, not hearing speech, they find it hard to imitate.

Children and childlike races use more gestures in their speech than do adults of the more highly developed races. It is even said that some savages can hardly understand each other in the dark.

However, in normal children the passage from gesture to speech is easy and comes almost without observation. The brain centers for speech and for the right hand lie close together, and the anatomical appearance is as if the use of either would tend to stimulate the other. As a matter of fact, in the training of feeble-minded

children the development of the hand has been found of great value in the development of speech and of other nearly-related brain centers.

ARTICULATE CRIES

Gesture, as we have just said, is accompanied from the beginning with more or less articulate cries. Significant cries are not limited to the human being. Buckman points out that fowls have twelve or more different cries by which they warn and guide each other; cats, six; rooks, six; and monkeys, two hundred or more, — almost a language in itself. Miss Tanner adds that idiots who cannot learn to speak or understand words can be taught some things merely by tone and gesture.

During the first months the baby limits himself almost wholly to vowel sounds, especially *â*, *o͞o*, *ă*. The first consonant is usually an indistinct hard *g*, sounded partly in the throat and partly through the nose. Then comes *m*, *p*, *d*, *l*, and *k*. Thus is arrived at the characteristic "a-goo." He tends also to double and

repeat syllables as savages do. Thus, "goo-goo-goo." The combination "ma-ma-ma" is usually the first. Buckman has an ingenious theory to account for this fact. He agrees with Vierordt that *ā* usually signifies pleasure, and *ă* signifies pain. Therefore, very naturally he thinks the broad *a*, used when the child is hungry and in pain, becomes a way of calling for his mother, who relieves hunger and pain. Presently he adds to it one of his earliest consonants, *m*, and then works his little trick of doubling syllables; and there you have "mamma." The root of this word is found in Sanskrit, Greek, and Latin, as well as in our modern languages.

IMITATIVE SOUNDS

It is during the second six months that the child usually begins to imitate the sounds made by others. Sometimes he achieves remarkable success in this effort; at other times he makes ludicrous failures. He imitates vowels more easily than consonants. To appreciate the difficulty of his task, let the mother herself

undertake to try to make some of the extraordinary noises which he manages to make. She will find some of the clicks and gutturals (which, by the bye, are much like the gutturals used by savages, the Arabs, and the Hebrews) quite sufficiently difficult of imitation, and will thereafter enter more sympathetically into her child's efforts to imitate her.

TRYING TO WALK

Toward the end of the first year the baby's attention seems to be switched from talking to walking. He gives his whole mind now to the effort to gain control of his newly acquired powers of locomotion. Usually these efforts put a complete stop to all further progress in the acquisition of speech, and sometimes he even forgets much of that which he has already acquired. But after he has mastered walking he regains his speech, and from that on his progress is very rapid.

The order of his intellectual advancement seems to be that he first understands speech,

then attempts to imitate it, then walks, and still later talks.

The child's first speech is so surprising and charming that it is no wonder we have formed the habit of imitating it and using "baby talk." But in doing so Miss Tanner declares that we hinder the child's speech by limiting ourselves to him. He ought to have put before him for imitation perfect and distinct models of speech. Even with such reiterated examples he is likely to find the matter of talking quite difficult enough. But if his examples themselves are poor and incomplete, how much greater his difficulty!

LEARNING TO SPEAK

As to the time in which a child ought to be able to learn to speak with a fair degree of fluency and accuracy, accounts differ. There may be wide variations without abnormality. While it is true that failure to speak within a reasonable period is one of the diagnostic signs of some forms of under-development of the brain, and of some diseases, yet many of the closest observers of children say that we cannot

rightly conclude from this sign alone that a child is abnormal, unless he does not speak by the time he is five years old. But, of course, as we all know from ordinary observation, most children speak fairly well at two years of age, and with considerable fluency at three years of age. Perez says that "the more intelligent a child is the less he uses words, and the more necessary it is for him that words should signify something to him if he is to learn them; and this is why he only learns words in proportion as he gains ideas by objects." This pronouncement, made by undoubted authority, offers considerable consolation to the parents of children who are late in learning to speak. As for parents of children who talk when they are a little over a year old there is no consolation for them. But, indeed, they don't need any, being already puffed up with pride! What they do need is a friendly warning to make sure that their child is not being pushed ahead too fast, for precocity is, as we are learning to know, a danger signal.

IS IT REAL TEMPER?

The world of mothers is divided into two factions in the discussion of this important question. There are those who think that the baby shows real temper within the first few months of life; and not only that, but that he can be taught by pain of various kinds to control his temper. There are others who think that genuine temper and self-will is impossible before the end of the first year, and that, therefore, any attempt at discipline is quite out of place before the close of this period. Now let us see what the scientific child observers, who have carefully avoided taking any side in this practical controversy, have to say as to the baby's temper.

Darwin observed that on the eighth day his child wrinkled his brow and frowned when crying, as if in anger. Perez noticed that a child in the second month pushed away with a frown distasteful objects. He adds that in the fourth month anger was unmistakably shown, the face and head were red, and the cry was irritable.

This anger is caused at first by delay in supplying food; but two or three months later will be called out by any thwarting of desire, such as the dropping of a toy. Commenting on these facts, Miss Tanner remarks: —

"Anger at this early age, it must be noted, is simply the instinctive rebelling against pain. It is wholly unreasonable and is best dealt with by diverting the child's attention if the deprivation is for the child's good. As the child gets a little older, especially if it is a boy, he is likely to vent his anger by beating the person or thing that offends him, or by throwing things at them. Here, also, until a child can be reasoned with, diversion of attention and the final securing of an expression of affection is the wisest method of treatment.

CAUSES OF ANGER

"At best only a few of the causes of anger can be enumerated. There is, in the first place, what may be called an irascible disposition, with which some seem to be born. Disappointments and

vexations which others would hardly notice result in violent outbursts of temper. Personal peculiarities of speech, gait, dress, — almost anything, in fact, — may lead to a hate that is almost murderous in its vindictiveness. When a child is so unfortunate in its disposition, only the most constant, temperate, kindly training in self-control will help him.

"There are, in some cases, physical conditions causing constant irritation which are reflected in this bad temper. Hence parents should first of all ascertain whether the child is healthy. Fatigue is also a common cause of irritability."

DESTRUCTIVE TANTRUMS

In children who are eight months old or more, there appears sometimes a violent destructive anger very hard to reckon with. In these emotional paroxysms the child destroys anything within his reach, screaming meanwhile at the top of his lungs. In such activity the love of producing a change is undoubtedly mingled with emotional excitement. Hysterical women some-

times exhibit the same symptoms. I knew personally a woman prominent in club work, the president of a certain federation, who, during fits of emotional excitement, would tear down curtains and smash furniture and china. In her it was plainly to be seen that passion operated as a sort of moral intoxication; and the same thing is true with children. In their ordinary moments they feel themselves weak. Their desires, however strong, cannot always take effect. But under the influence of passion they feel momentarily strong, and this delights them.

A child in such a tantrum is temporarily insane. The tantrum itself is a species of emotional insanity. There is certainly no use arguing with him, and still less use in threatening. The only thing to do is to keep as still and cool as possible yourself, and to act promptly. You have the advantage of your size: make use of it. Pick him up, carry him to a quiet place where there is nothing he can injure, and leave him there. Solitude and silence are his best helpers.

PUNISHMENT

Striking and punishment are worse than useless. Usually they do not even succeed in quieting the child. But if they do, you have merely substituted the base emotion of fear for the emotion of anger — and that is little gained. In most cases you will find that the real truth is that the child has made you angry. You have been overcome by the contagion of his evil state, instead of overcoming evil with good.

Many mothers fail of utter honesty with themselves in this matter. They often pretend that their excited feelings were not anger, but only a zealous wish for the child's welfare. But God, who sees beneath our feeble pretenses, knows that when we large, strong women strike swiftly, and with something of enjoyment in the act, our little children, we *are* angry! We are in a temper which has in it more of moral turpitude than the hasty temper of the child himself. I do not believe, nor can any one make me believe, that a woman ever struck a child in perfect calmness of

spirit, her heart filled with love. I used to think that I could do it; and I used to fool myself into thinking that I had done it; but now that years have brought comparative calmness I know better.

REMOVING TEMPTATIONS

The thing we ought to try to do is, first, to avoid as far as possible all occasions for such display of temper, for it is very easy to form in a child the habit of emotional uncontrol. Especially is this so when a child inherits from either father or mother that weakness which we call quick temper. We need to establish a habit of poise, and of quiet, and therefore to remove as far as possible all temptations.

This does not mean at all that the child should have his own way in everything for fear of an outbreak of temper. On the contrary, he must never be allowed to feel that he gains anything by a display of temper, except quiet and solitude. It means simply that we should look ahead; and when we know, for example, that being lifted suddenly out of a warm bath into a

comparatively cold room brings on crying, we shall try to have something to distract his attention, like a piece of candy to pop into his mouth at the psychological moment. Or when we know that he becomes restless and irritable when his meals are long delayed, we will put ourselves out to see to it that they are not delayed at all. And so with other recognized causes of bad temper.

QUIET AND SOLITUDE

But when, on the other hand, the temper is on in full force, we must see to it that the child does not get what he is screaming for. Even if it is right in itself, it is not right to let him have it while he is screaming, lest he come to think that letting go of himself is a good way of getting what he wants.

Physical motion of all sorts forms a good vent for such nervous and emotional excitement. If the child can be induced to run out of doors, or can be given a hammer to pound with, or in any other way can be led to work off the nervous excitement through muscular activity, his temper will evaporate harmlessly.

The cures for temper, then, are: First, the avoidance of provocation; second, distracted attention; third, active physical exercise; and fourth, if all these fail, solitude and quiet until the storm has blown itself out.

FALLING OBJECTS

Our decision, then, as to the controversy stated in the beginning of this article, is that the baby has a real temper long before he is a year old, but that he is not able to control it himself. As we see, from the *Progress of the Month*, he has not yet built, in brain and nervous system, the mechanism which enables us grown-up people to deny ourselves the yielding to an impulse. In psychological terms, he is not yet able to inhibit (or forbid) his impulses. Of course, no amount of punishment will build this mechanism for him. We have, then, to wait and, meanwhile, to help him.

PROGRESS OF THE MONTH

About the tenth month the child discovers his own body as distinct from other bodies; that is,

he begins to make this discovery. He is not perfectly sure of the fact until he is almost two years old. Preyer, among his careful records of his own little son, makes the following comment upon this fact: —

"How little he understands, even after the first year of his life has passed, the difference between the parts of his own body and foreign objects is shown also in some strange experiments that the child conducted quite independently. He sits by me at the table and strikes very often and rapidly with his hands successive blows upon the table, at first gently, then hard; then, with the right hand alone, hard; next, suddenly strikes himself with the same hand on the mouth; then he holds his hand to his mouth for a while, strikes the table again with the right hand, and then on a sudden strikes his own head (above the ear). The whole performance gave exactly the impression of his having for the first time noticed that it is one thing to strike one's self, one's own hard head, and another thing to strike a foreign hard object (forty-first week)."

Now, for the first time, also, the child looks at an object when it falls to the floor. Last month he dropped it out of his hand and seemed to be surprised at its disappearance, but he did not follow it with his eyes unless it moved very slowly. But this month his greater control over the muscles of his eyes, and his growing powers of reasoning from cause to effect, lead him to follow the falling object and notice where it lies. This fact is the secret of that trick which so much annoys mother and nurses at this period, *i.e.* the trick of throwing down almost everything that is put into his hands. He is really making a series of experiments in doing this, and is discovering what each human being has to discover afresh for himself; namely, that bodies are heavy, and fall if not supported.

CAUSALITY

At this time the child turns his head in the direction of any new sound that he hears. This is especially marked in the quick turning toward the sound of his mother's voice. This may look

like a slight thing, but it gives evidence of great intellectual advance. For the child is evidently reasoning thus: "Here is a sound. Every sound I have heard was accompanied by something moving. Something must be moving now. What is it? I will look around and see."

Preyer has another instance to relate in illustration of this trait: he tells how his child when ten months old struck several times with a spoon upon a plate. It happened accidentally, while he was doing this, that he touched the plate with the hand that was free; the sound was dulled, and the child noticed the difference. He now took the spoon in the other hand, struck with it on the plate, dulled the sound again, and so on. In the evening this experiment was renewed, with a like result. Evidently the function of causality had emerged in some strength, for it prompted the experiment. The cause of the dulling of the sound by the hand — was it in the hand or in the plate? The other hand had the same dulling effect, so the cause was not lodged with the one

hand. Pretty nearly in this fashion the child must have interpreted his sound-impression, and this at a time when he did not know a single word of language.

BITING

Biting begins to appear about this time, and as the child has now four teeth, the biting is distinctly effectual, — as many a nursing mother knows to her cost! This action is as instinctive as sucking. If the baby is given bread, he promptly proceeds to crunch it with his sharp little teeth, without being instructed or seeing any one whose action he imitates.

EYES

His eyes still converge a little at times, and continue to do so until the twentieth month. But it is evident that the more he uses his eyes with conscious purpose the more they tend to move evenly in the same direction. He looks more often at objects connected with his food than anything else. The intensity of his attention may easily be guessed by the more or less

complete fixation of his eyes when gazing at any object.

HANDS

As to his hands, he has already made great progress in the skillful use of his thumb and fingers. He shows it particularly when tearing papers, for he is already able to pick up from the floor very small shreds. But if any of these pieces of paper get in his mouth, his efforts to get them out again with his own fingers are very awkward, showing that touch without sight is as yet uncertain. With sight, however, it is already definite enough to enable him to pass a very small object, such as a thread or hair, from one hand to the other.

He gains also in the power to use his arms, and may now be taught to wave bye-bye in imitation, although he does not yet understand the significance of the gesture.

SELF-CONTROL

The voluntary impulses are now rapidly growing. The baby is even able at times to forbid a

reflex nervous action. You will remember that reflex acts, such as the winking of an eyelid before an expected blow, are quite involuntary. Adults gradually teach themselves to control most of these reflexes; but before the tenth month babies cannot do so. The machinery which would enable him, for instance, to resist the urgence of bladder or bowels is now only beginning to be built in his brain. Therefore up to this time it is perfectly useless to try to teach him habits of self-control in this regard. A puppy may be trained when three months old; but not a baby. As we have seen in our studies of precocity, this is because the baby has so many more things to teach his brain than the puppy has that all he can do for a long time is just to start the good work. He can't finish any of it. So, no matter what nurses and neighbors may say about phenomenal babies who use the chair from the beginning, don't believe a word of it! Let your youngster alone until he is at least ten months old. Then observe his natural intervals and conform your training to them.

Soon he will begin to announce his needs by restlessness. This means that there is a struggle going on between his new-born powers of self-control and his well-established reflex impulses. The struggle cannot be maintained long, and the mother must not expect it, but must be quick to offer assistance. There is no need of punishment, for the child is glad to welcome such help as this.

SITTING UP IN BATH

About this time the youngster, who has long been making efforts to sit alone in his bath, at last accomplishes his object. He has long been able, of course, to sit up on his mother's lap, but that is because her body aids him in his efforts at equilibrium. It is different in the bath, where the smooth surface of the tub offers him the least possible support. However, he at last succeeds, and can now maintain his sitting posture for some minutes without support, so long as his attention is not distracted. This is one of his chief studies for this month, and he usually masters it for life.

WALKING

When he is held up under the arms so that his feet touch the floor, he makes walking motions. At first his feet cross over once in a while, and he makes sidewise steps. As neither of these acts bring any unpleasant consequences, the psychologists are puzzled to know why he struggles not to repeat them, and keeps on trying to move forward in a straight line. He soon succeeds in this, and manages to make very good straight-away steps, although he lifts his foot too high and stamps too hard. His interest in this activity is so great that his crying can often be stopped merely by holding him so that he can walk forward.

SPEECH

As for his speech, it is evident that he uses more syllables and varies them better when he is left all alone and is chattering away to himself, than when some one is noticing him, and talking back to him. In this we see again that spontaneous activity, the mere unconscious use

of the organs of speech, is at once more perfect and of a lower order than voluntary, conscious use of the same organ. That is, when the baby is merely playing with his tongue and throat, gurgling, and cooing, and smacking his lips, and uttering various sounds, this performance, which does not require any particular effort of the will, is more perfect of its kind than his attempts at imitation. When he says "ma-ma-ma-ma-ma," for instance, just opening and shutting his lips, his enunciation is more perfect than when he tries to say the same word in imitation of his mother. Yet already these meaningless babblings are beginning to come under the control of his will, for he tries hard to imitate those who speak to him, and he yields the closest attention to the effort. The latest researches into the great problem of the relation of the brain to the mind show that such faculties as, for instance, the speech centers, are actually built up in the brain structure by the will of the individual. In these early efforts to imitate speech we see the will

of the little child actually building in his brain that power of uttered speech which beyond all other faculties distinguishes man from animals.

The baby already has four teeth, and no more are due now until the fifteenth month. His weight should be about seventeen pounds, and his height about twenty-seven inches.

CHAPTER XII

DECEMBER

One Year Old

WEANING

At the close of the first year we have to face the problem of weaning the baby. But if we have been in truth wise, we have already made considerable preparation for this event — did you think I was going to say ordeal? It used to be an ordeal to mother, child, and the whole family; but it need not be one, if you will exercise a little common sense, and take a little time in which to make the change.

First, let's take a look at the old-fashioned way of weaning. The mother seizes upon the opportune visit of some near friend or relative,

and decides then and there, with scant reference to the baby's health and comfort, or, indeed, to her own, to have the weaning. To this solemn and uncomfortable rite three days and nights are devoted. Without warning or preparation the poor baby, full of his own affairs, very busy trying to walk and talk, is suddenly deprived of the chief joy and sustenance of his life. Of course he howls, stretching out appealing hands to his mother whenever she comes in sight. Therefore she keeps mostly away, and the forlorn youngster has to put up with a poor substitute. Any one, the most devoted grandmother, even, is a poor substitute for mother in a baby's eyes. Then his stomach begins to bother him, and strange discomforts pervade his abdominal regions, because, of course, he is partaking of unfamiliar food. But when he cries he doesn't get mamma, and a warm snuggle against a sweet breast full of comfort, but a dry old auntie or grandma, with some peppermint in a spoon! And at night he sleeps with it — with this odious person who

has taken the place of his mother! No wonder he howls and frets, and sometimes makes himself ill. Scarcely a greater grief could befall a year-old baby than this sudden loss of his beloved comforter and source of food supply. He doesn't know that he will ever get it back again — and indeed he will only get it back in part. Such weaning is to him poverty, famine, and sudden death, all rolled into one pain and bewilderment.

MISERY FOR TWO

Meanwhile, the young mother is going about with bursting breasts and a yearning heart. She tries to be deaf to his cries; but in truth she wants him almost as much as he wants her. To be sure, she can relieve the painful pressure of the milk by using a breast-pump; but what a substitute is this harsh thing for the baby's soft, strong little mouth and pushing, warm, snuggly body! She rubs on Belladonna ointment, and in spite of bandages, pump, and medicine, drips milk almost as plentifully as the baby drips tears.

Such weaning is a wicked and senseless performance, full of pain for both mother and child, and likely to give rise to serious mischief. A disordered digestion on the part of the baby, and consequent retardation of his growth and interference with his normal activities, is almost sure to follow; and some babies even become ill. As for the mother, she may get an abscess in her breast or lay the foundations for a future tumor or cancer.

Now, having looked on that picture, look on this. This is the right way to wean a baby: —

THE RIGHT WAY

Gradually in the last two or three months he has been getting extra things to eat — a soft-boiled egg once in a while, or milk toast, or baked potato with cream, or a bit of bacon to suck. He has tried a little oatmeal water or barley water. The oatmeal he gets when his bowels are too tight, the barley when they are too loose. What is necessary is just to increase this feeding — very

gently and slowly. What has been irregular now becomes regular.

He has first *one meal* a day which is not drawn from your breasts. You can tell, by watching his bowels, his sleep, his general serenity, which foods agree with him. Keep this up for a week at least, and for longer if the new food still shows signs of imperfect assimilation. Then, by the time this rule has been established, your breasts will have ceased to swell and throb at the hour when you used to nurse him, but at which he is now fed. If omitting one meal a day gives you this discomfort, think how you'd suffer if you suddenly omitted all the meals!

GRADUAL WEANING

Next week, feed him twice a day. The week after, three times. And so on. This is as fast as you can go. Indeed, it is better to go slower, and make the change only every two weeks. The whole weaning is safest and happiest when it spreads over a period of three months. After all, that is none too long a time to accustom

the baby to such a change of nourishment. But if there is any special occasion why you should hurry, you can try changing one meal every week. But even then you must watch carefully to make sure you are not going too fast.

WRONG WAYS

As for the kind of food to wean on, there are a few "don'ts" to be disposed of before we pass to more positive instructions. *Don't* change to any kind of bottle food. If you do, you'll have a second weaning to go through by and by. Change at once to spoon-fed foods, and no bottle at night.

Keep shifting along the night nursing until it coincides with the early morning nursing. This can be the last to go, because it is the one for which other food can be least conveniently substituted. After he has learned to eat heartily and digest his food well, you can give him a piece of bacon to suck in the early morning instead of nursing him. Anyway, he will

soon be so intensely interested and tired with his play, that he will sleep right through the night, and until almost time for you to get up.

Don't change to any single special food. The baby now needs variety. Advertisements to the contrary notwithstanding, there is *no* prepared food which meets all the needs of a growing child. Follow his appetite somewhat, and give him the stimulus of variety.

Don't have him sit at the table with the family, where he is fed all sorts of things, no one knows how much. It's such fun to feed a baby that he tempts the sternest father or even big brother to indulge him beyond reasonable bounds.

If he must come into the dining room at all — it is much better that he should not, if he has a nurse — let him have his own little low table and kindergarten chair, close beside his mother. From that lowly place he cannot see the tempting food spread out above, and he takes with joy whatever is given him. This is a good plan to follow out for the first four years. As other children come they can join this little

party, only graduating to the large table when they have reached years of fair discretion and decent table manners.

Now as to the articles of food he may have:

FOODS FOR WEANLING

Milk, of course. Do not too quickly yield to a supposed idiosyncrasy against it. It is true that some children cannot take it; but they are a very small percentage of the total number of children. Mothers who do not like milk themselves often give up very quickly the effort to make their children like it — thus laying up all sorts of trouble for the future. The child who likes milk can be well fed almost anywhere, but the child who dislikes it finds half the usual soups, vegetables, and desserts spoiled for him by its presence. If your baby does not like straight milk, try giving it to him warmed and sweetened. Or make him a cup of "cambric tea" — that is, hot water, sugar, and cream. Be careful not to use too much sugar. Sugar-of-milk, to be had in packages from the drug

stores, is better for the weanling than cane or beet sugar. It does not ferment in the stomach.

Next, soft-boiled eggs. Or very hard-boiled eggs, cooked at least fifteen minutes.

Next toast, buttered, and wet with a little hot water; or milk toast; or toast with a little platter-gravy on it; or toast with a soft poached egg on it.

Next, Educator crackers, or other hard, dry crackers that will not choke him with crumbs.

Bacon, boiled, not fried. Let him hold a strip and suck it. Being boiled, it will not break off in his mouth. It is a wonderful appetizer and full of nourishment. Other meats, in small quantities, are best given only after the appearance of the double teeth.

FRUITS AND VEGETABLES

As for vegetables, he can have baked potatoes, with a little cream on them. Fried potatoes he must never touch until he is three years old at least. Boiled potatoes are permissible, but not so good as baked. Potatoes must never

become a staple article of diet. They make neither bone nor muscle, but chiefly fat.

The usual breakfast cereals that cook up into porridges are all right; but not the flakes nor puffed grains. The baby cannot chew these, and when he does not choke on them he swallows them whole, and they go right through his little system, irritating as they go. Oatmeal is excellent when there is no looseness of the bowels. It is not good in hot weather.

As for fruits, he can have a baked apple, the seeds and skin carefully removed, and orange juice, and small quantities of the pulp of perfectly ripe, perfectly fresh, raw fruits, such as apples, peaches, and bananas. These should be scraped with a spoon, and fed to him only a *very* little at a time, — say three teaspoonfuls. They, too, are excellent appetizers. Babies love bananas, and this love may be safely gratified if the mother makes it a rule never to give them the fruit itself to hold, but feeds it a little bit at a time, scraped fine in a spoon. This fruit must be perfectly ripe, but not at all overripe. The

indigestibility of the banana consists in the fact that it requires saliva for its digestion and yet slides down the throat so easily without chewing that it is rarely mingled with this necessary fluid.

It is a good idea to plan the weanling's meals as carefully as you do those of the rest of the family. I always write down my menus for the day in a little blank book kept for the purpose; and I used to write out the babies' meals by themselves. Thus I secured for them an attractive and wholesome variety.

TIME OF WEANING

As for the time of weaning, it should be about the close of the first year. Unless the mother is ill, or there is some serious trouble with her milk, weaning ought never to be attempted before this time. A slight, temporary derangement of the milk is not enough to justify weaning. Of course, another pregnancy necessitates it, for no woman can nourish properly two babies at once. However, the old-fashioned idea that a

woman is not very likely to become pregnant while she is nursing is founded on fact, and constitutes another reason for not weaning before the close of the first year.

But some women carry this idea much too far, and nurse the baby almost into the third year in the hope of escaping pregnancy. This is altogether a mistake. Such prolonged suckling is not good for either mother or child; and it will not accomplish the object she has in view. It will simply make her a thin, pale, dragged-out woman with a pale, flabby, fretful baby in her arms.

If the weaning begins at one year, as here advised, and lasts three months, the mother will gradually cease nursing, will recover her tone, and, when the baby is fifteen months old, will be rosy and healthy, with an equally rosy and healthy baby. Let's hope they'll live happy ever after — for they've certainly had a good start.

LEARNING TO WALK

When the baby began to creep we noticed how his horizon had widened, and how many more experiences he had with which to build up his growing personality. Now we see that walking is as much of an advance over creeping as creeping was over the previous stage in which the child had to be carried about by his mother. It is so largely because the upright position sets the child's hands free. He can not only go to what he wants, but can feel of it, and carry it about with him from place to place. In creeping, of course, this was not possible. When he gains this power he eats and sleeps better, his general health improves, and he is sweeter tempered. This fact, together with a number of others confirmatory of the same truth, shows that active exercise of all the powers is necessary to health and happiness.

In beginning to walk the baby holds on at first by the wall or furniture. He has already probably had considerable practice in moving

over the floor as if walking, although his weight has been partly supported by some one who holds him under the arms. The next stage is his attempt to get along by himself, substituting the wall or a chair for the missing human hand. Very independent babies when they first find that they can get about in this way resent the too-efficient assistance of the mother. They want to be able to get about by themselves, and this desire, while it often makes the mother ache with suppressed helpfulness, should, nevertheless, be encouraged.

Long after he walks by holding on to chairs and walls the little fellow will drop on all fours and creep over open spaces.

PUSHING A CHAIR

Presently he learns to push a chair ahead of him, and for this purpose nothing is so good as a strong, well-built child's rocking chair, for the rockers enable it to slide smoothly over the floor, and its height is about right for the little fellow, who still maintains a half-recumbent attitude.

As he pushes the chair about, his fat legs bravely straddling, it is evident that this mode of progression now is just about halfway between creeping and walking. The baby carriage, too, is a great help to him at this time. He can take hold of the handles, push it ahead of him, and at the same time maintain his own balance ; but the easily moving wheels tend to go so swiftly that a restraining hand is necessary to keep him from bumping his ambitious little nose.

In trying to go entirely alone the fear of falling hinders many children. I have never been able to agree with those people who think that it does not matter how many bumps a child may get in his first attempts at walking. If he is too often hurt, it stands to reason that he will become timid and afraid of venturing again, and thus these early falls may lead to an unnecessarily late development of his powers of locomotion.

FEAR AS AN OBSTACLE

Often a child who is really able to walk by himself is still so fearful of falling that he will

not attempt it. He will hold on to one finger, exerting almost no pressure upon it, and walk bravely; but he will not even attempt to go alone. Miss Tanner tells of one little girl who had always held on to her mother's dress while walking. One day she seized the scallops of her own skirt and walked bravely off, performing a feat closely analogous to the famous one of raising one's self by one's boot straps. Professor Hall's daughter chanced to walk alone for the first time when she had a pair of her father's cuffs slipped over her arms, and for several days she could walk very well with them on, but would not stir a step without them. When a child is not being constantly urged to walk, it is not infrequent for him to take his first independent steps without knowing it, in his eagerness to get something that he wants. But as soon as he realizes that he is going alone, while he may be very proud of himself, he promptly falls, and may not try again for some days or even weeks. Then suddenly he walks alone again, and each day makes large gains,

until, in a week or so, walking is preferred to any other mode of locomotion.

DATE OF WALKING

As to the age when children first walk alone, accounts vary, and undoubtedly perfectly normal children vary also. Mrs. Hall reports that her boy stood alone for a minute in his thirty-eighth week, and in the forty-eighth pulled himself to a chair and stood for five minutes. Preyer's boy walked in the sixty-eighth week, and others, whose records have been kept, walked at the twelfth month, the thirtieth, and even the thirty-sixth month!

In teaching the baby to walk, we have, of course, to lend him every intelligent assistance in our power. We want to save him falls as much as we can without interfering with his freedom of experiment; but we do not want to urge him to walk before he is entirely ready. If he has betrayed any delicacy, it is better even to check this activity than to stimulate it. If, for example, he has not got his teeth properly,

or if he got them very much too soon; if he is undersized and below the normal weight, it will not do to allow him to walk even so soon as he wants to himself. This is because his bones have evidently not been growing as they should. There has been some failure of nutrition; and walking under these circumstances may lead to bowlegs and knock-knees. Extremely fat and heavy babies, too, ought to be checked somewhat, if the fat is soft and the skin pale. But if, on the other hand, the child is obviously full of vigor, with a good color, and four teeth, he may well be encouraged to do as much walking as he likes, even though he be pretty heavy. The new exercise will of itself tend to reduce the unnecessary amount of fat.

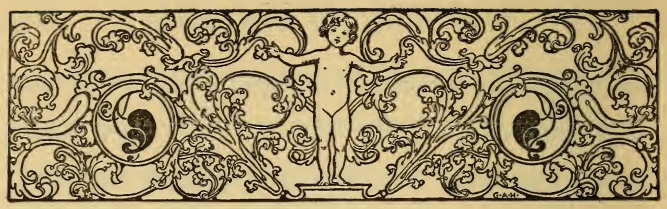
Some writers say that no one need be worried over the baby's failure to walk before he is three years old, but I should myself take alarm if he did not walk by the time he was two years old, especially if his general health showed any signs of being below par. There is no harm in consulting a doctor in regard to the baby's

condition, and it may be that the retarded development is due to some unsuspected weakness which calls for remedies and extra care.

IRREGULAR ADVANCE

It must not be supposed, however, that growth in the ability to walk proceeds in a perfectly even fashion from standing alone to complete mastery of legs and back. On the contrary, it is almost always more or less irregular. It may be interrupted by the acquisition of speech, as we have found that the acquisition of speech may be interrupted by the effort at walking. Or any strong absorbing interest may put a stop to it temporarily. Sometimes it stops for no apparent reason. Perhaps it may be that the child's store of nervous energy has been overdrawn, and a rest is required before he lays up enough more to start him going again. We do not need to worry about any of these fluctuations; but we will, of course, watch every possible symptom of approaching trouble. We will notice whether the child is languid, whether

he hangs his head and droops, whether he eats well and sleeps well. If any of these signs appear, we shall take him to a doctor, for some childish disease may be impending which early care may avert. But if, on the other hand, he seems perfectly cheerful and well, but simply does not get ahead with his walking, we shall know that he is taking a well-earned rest, and we will not trouble ourselves further about the change in him. Probably, when he takes to walking again, he will surprise us by his rapid progress.



CHAPTER XIII

SUMMARY OF THE YEAR'S ACCOMPLISHMENTS

LEARNING TO TALK

Now that the first year of life is completed, let us look back and see what the baby has accomplished. First we will take up the matter of speech. We have found that in the beginning our youngster merely babbled without any attention or significance. These babblings were just a sort of gymnastics of the vocal organs. He seemed to do it only because he could. Yet even in these almost unconscious sounds we have been able to trace the steady development of his intellectual powers. For a while at first he uttered only vowel sounds, yet later to these he joined consonants in their order of difficulty, thus making syllables. Having once

found out how to make a syllable, he repeated it, thus making such combinations as "ma-ma," "pa-pa," "a-goo," and many others. Although we have agreed to consider some of these duplications, such as "ma-ma" and "pa-pa," as actual words, uttered with intention, they are not so in reality when the baby first utters them.

But as soon as he makes these sounds those about him begin to speak them, too, and to urge him to repeat them by imitation. This is a long step in advance of the original aimless utterance, and it is a long time before the baby is able to accomplish it. As soon as he does he has become to a certain extent conscious master of the elements of speech.

ASSOCIATION OF SOUNDS AND IDEAS

The next step is that he learns to associate certain sounds with certain acts or objects. He does this by means of constant repetition. For instance, his mother calls herself mamma, is pointed to as mamma, and is called by every one mamma; and by and by this first, easiest-

uttered word becomes attached to the idea of mother, and, as Buckman points out, is made to cover the whole idea of the person who relieves hunger, or pain, or even the relief itself.

With most children the first word is "mamma," and the next, oddly enough, is "kra" or "ka-ka," uttered with a sort of a guttural snarl and a disgusted raising of the upper lip. It is used to express disgust, and as such appears in a number of languages as a root word. In Greek, for instance, the word *kakos* means bad. "da-da" is another early word. It seems to mean "there-there," and signifies pointing out some object and delighting in it. For this reason, perhaps, some adopt it as the word for father, calling him "daddy." "Na-na," another early word, stands for protest and refusal, and in this sense it may be found in almost every language. It is, of course, our own word "no."

FIRST SOUNDS

Verbs predominate with young babies and with primitive peoples. This is because they signify

actions, and action is the chief thing desired. Probably the first sentences consisted of one word each. During this first year all the vowels appear, the consonants coming later, according to the order of the difficulty. Tracy says that the order of the appearance of letters is as follows: *b, p, m, h, a, w, o, k, d, q, n, t, f, e, s, ch, g, y, sh, v, th, l, r.*

FLEXIBILITY OF SPEECH ORGANS

As the vocal organs form habits they become less flexible. Therefore it is of the utmost importance that children should be taught to enunciate correctly in the very beginning. Mothers often sin in this respect through their delight in the baby's speech, which seems to them so charming. They love all the baby's ways, all the evidences of youth and immaturity, and in the gratification of their own delight they quite forget the child's welfare. For, before he becomes a man, he has with considerable difficulty to unlearn all these inaccurate expressions which she has helped to build deep into his habits of thinking and acting.

In his first use of words, the child, whose ideas are largely in excess of his vocabulary, uses each word to cover too much territory.

BLANKET WORDS

"Thus, Romanes gives the case of a child who saw a duck on the water and called it 'quack.' After that he called all birds and insects 'quack,' and also all liquids. Still later, he saw an eagle on a piece of money and called it 'quack' again. Lindner's daughter, when asking for an apple, was taught to say 'apple,' and thereafter used the word as meaning *eat*. Another child used the word 'ta-ta' to say good-by; then when anything was taken away; then for the blowing out of a light. Still another used 'hat' for anything put on his head, including a comb and brush. Dipping bread in gravy is called a 'bath.' The palate is the 'teeth roof'; the road is the 'go'; the star is the 'eye'; all metals are 'keys,' etc.

DEFINITE MEANINGS

"Later, he tries to limit his words and make their meaning more definite. Thus Darwin's son called all food 'mum.' Then, later, when he wished to say sugar, he called it 'shu-mum'; and when he needed to say licorice he called it 'black-shu-mum.'" (Tanner.)

Such limitations of the meanings of words, making each word fit more exactly the thought which it expresses, is another tremendous step in the acquisition of speech. As soon as he has taken this step he has learned the principle on which speech must be adapted to the needs of thought, and it is merely a question of how to apply the principle in the innumerable instances which arise every day. The application, of course, varies with the individual child, and the results are often as amusing as they are instructive.

DESIRE TO COMMUNICATE

The next step is to discover that not only must he make his words fit his own thought,

but he must make them fit the thought of other people, because his desire is not only to *express* his thought, but to *communicate* it. In order to accomplish this, he must use as far as possible the words which other people have agreed upon. As soon as this idea becomes perfectly clear to him he imitates more carefully than before. He drops his invented language and uses the conventional forms which those about him use. That is, if he is an English baby he uses English words, and if he is a French baby, brought up by English-speaking people, he will also use English words. It is not the specific language which is inherited by children, but merely the faculty of using speech and of adapting it to the customs of those among whom he finds himself.

MOTHER AS ASSISTANT

In this last and most difficult process the mother can be of the greatest assistance to the child. She can show him both by example and by direct speech what the accepted usage is, and lead him from the beginning to speak accurately.

Of so much importance is this early training that no amount of teaching at school or even in college can in later years entirely overcome early incorrect habits of speech. A child who says "ain't" for the first two or three years of his life will say it all the rest of his life whenever he is off guard, and thereby proclaim to all observers the character of the speech that was about him in his infancy. College theses showing considerable brilliancy of thought and observation nevertheless often contain blunders in grammar and idiom due to this lack of early training.

EXTENT OF VOCABULARY

As for the number of words which children use at the close of the first year of life, they, of course, vary greatly with the aptitude of the children themselves, and with the amount of speech which they have been encouraged to use. Tracy says that on an average they can speak about ten words. The first sentence appears from the seventeenth to the twenty-third month. There is, however, no particular importance to be

attached to the failure of a child to come up to this level of acquirement. He may simply be brighter in other respects than in respect to language; or he may be naturally slow of development in all directions; or he may be laying such broad foundations for an unusually large and commodious structure of character that he cannot arrive at speech as soon as do children of a slighter personality. Here again we must repeat the warning against hurrying him. If he is urged too far in speech making, he may be found to neglect some other equally important elements of growth.

OTHER ACCOMPLISHMENTS

Our baby has done great deeds in this one year. In the first place he has progressed from a weight of six and one half pounds to about twenty pounds. His head at birth was much larger in proportion to the body than it now is; a fact signifying, of course, that his body has made a considerable growth. The skull plates on his head have grown together so that there is no longer an open spot, although many babies' heads

are still somewhat soft and sensitive. His ears and eyes, which were unfinished at birth, have now reached almost a complete development. This is especially true of his ear, which seems to distinguish sounds almost as perfectly at the end of one year's growth as later in life. Of course, this does not mean that it has reached the sensitiveness of that of a trained musician, but that it has become able to distinguish sounds for all ordinary purposes. The eye can now take a sharp and clear impression, something like a photographic plate, but it is not yet able to distinguish color clearly. The best observers say that blue, violet, and green continue to look alike to a child until somewhere about the third year.

FROM SPINE TO CEREBRUM

The new-born babe we have found to be a spinal animal, relying chiefly on the functions of the spinal cord. Many of the higher brain centers do not exist at all, and those that do exist are incomplete. But by the end of the first year the baby has made rapid growth in his cerebral regions, and all the higher centers, such

as those of speech and causation, are well developed and in active use.

At first the baby had "no language but a cry." During the first year we have seen this cry grow into speech. In the beginning it was very easy to mistake him; in fact, most of the time his attendants did not know what he was crying about. But by the end of the first year he can make his wants clearly known, and is sometimes even able to gratify them himself.

TEETH AND CHANGE OF FOOD

He has four teeth, with which he can bite, and his ability to digest varied foods has increased considerably; in fact, now he needs some addition to his mother's milk, and we have begun to give him the extra food suggested in the last chapter. The intervals between meals have steadily increased. During the first month he seemed to be eating almost all the time, because he had to be fed every two hours, and it took sometimes almost an hour to feed him; but now he needs food only every four or five hours.

He ought to have a good deal of hair by this time. If he was born with a crop of it, it has all fallen out and been replaced by less soft but more manageable hair.

His little nose was perfectly immobile for the first six months, but in the seventh month he began to take possession of it, and now he can move it most expressively.

SLEEP

He has learned to sleep longer hours, and to stay awake longer hours. His increasing intellectual interest has led to this result. He often finds the world about him so full of thrilling experiences that he does not go to sleep until driven to it by pure exhaustion.

The second month we noted with joy his first conscious smile. This has broadened into a joyous crow, and has now become a full human laugh.

CONTROL OF HEAD

He could not look around in the beginning, but now he can. We remember that this effort

to command the body in order to satisfy an intellectual hunger is regarded as one of the first signs of a truly human intellectual life. He turns his head not because he has any bodily want which that motion will satisfy, but because he must examine more closely the cause of certain sounds and sights which reach him. It took him months before he could manage to hold his head up, but he has now accomplished this feat, which is beyond the power of any animal, even the strongest.

EXPERIMENTING

We have seen him experimenting in all sorts of ways to get acquainted with his own body. In the early months he did not know why he could not suck his fist and at the same time wave it around in the air. In order to solve this problem we have seen him studying his hands and feet for hours. But now that he is a year old he knows as well as you do that his hands and feet are attached to himself, and that he is, to a large extent, master of their motions.

It took him a still longer time to discover that his own body was distinct from other bodies about him. He made the discovery only in the tenth month by means of a number of repeated experiments. But now this knowledge is his for life.

HEARING

From being either deaf at birth or very unheedful of sounds he has become very sensitive to all noises. He has learned to manage his eyes, which originally rolled about in the most extraordinary manner, one eye looking out at the left while the other looked out to the right, one looking up and the other down, and one open and the other shut, and so on, in the most uncomfortable fashion. Only by repeated efforts to see, and conscious effort to focus both eyes clearly upon an object in which his mind is interested, has he learned to use his eyes as you and I use them.

SEEING

At first he saw all faces as mere moving disks of light, but by degrees he has learned to distinguish the shadows upon this round light surface so perfectly that he knows the faces of strangers from those that are familiar to him, and can even distinguish his mother's face and his father's from other familiar faces.

MOVING

He is so far master of the large muscles of his body that he, who could not be safely left unwatched in his crib, can now turn himself over.

CONTROL OF HANDS

As to the smaller muscles of his hands, how perfectly he has come to control them! He grasps with intention at all sorts of objects, and by learning to put his thumb opposite his fingers — a trick which no monkey or baby can perform — he has made of his hands the most perfect machine ever known — a machine which

is the foundation model for all the complicated engines in use in the great factories of to-day. The great machines are merely enlarged hands that are made by hands, and for hands, and after the model of hands.

He has discovered by long and patient experiment that objects will fall to the ground.

He has taught himself to sit alone.

He can creep.

He can stand.

He can WALK.

EXPRESSION AND REPRESSION

Not only has he learned to express his desires and his various emotions, but he is just beginning to know how to suppress an expression. Think what this means! At first he could not in any other way than by vague crying tell us what he wanted or how he felt. Now he can tell, and it has taken him almost a year of hard, patient work to manage it. But as soon as he learns how to tell with emphasis he is required to put a check upon this expression, and bring

it within bounds. So that if, for instance, he wants something very badly indeed, and proceeds to scream for it and to work every muscle in his body in the effort to get it, in the very height of this wholly successful endeavor he is obliged to quiet down and hold himself in; or, as we say, not realizing the full force of our words, he has to learn to control his temper. This highest and most difficult function of mind he only *begins* to put into action by the close of the first year.

VOLUNTARY MOTIONS

In the first few months he could not will his movements at all. Now he is so far able to will his movements that he can carry his body about from place to place, and can help himself to things which he wants, and is master of a gesture language. Even the fine muscles of his face are under his control, so that he can and does express by the most varied play of features the more delicate emotions which surge through him.

From involuntary noises and gestures he

rises to make voluntary noises by which he intends to convey a knowledge of his state. In the next step he finds himself able to make these noises even when he is not in a particular state of mind, but only in imitation of others who make them to him. This is significant of his desire to be at one with the persons about him, and not only to communicate to them his own state of mind but to understand theirs. Therefore his next step after imitation is to conform his own expressions to the expressions commonly in use about him. That is, he begins to adopt the language of his family. He begins to speak.

GROWTH

During the first three years of his life he makes half of his growth; that is, if at three years old, he measures two feet, eight inches, he will, when full grown, measure about five feet, four inches. In the same way he acquires during these first three years a full half of the body of knowledge which will be his in his prime. That is, a learned man of seventy has

only made, in sixty-seven years, the same intellectual advance that he made during his first three years.

Just think a minute! During these first years the child has laid the foundation for mastery of his body, for knowledge of the surrounding world of nature and of human beings, and of his relation to them. All his after knowledge is but a final analysis, or a fuller carrying out of these fundamental experiences.

Of these three years the first year is the most important, for in that year all these activities have their beginning. It is no wonder that books are written about it; and that scientific men have found it worth their concentrated attention. It is time that mothers knew the importance of it, and that clear-eyed knowledge, rather than intuition and tradition, should guide their actions. For to the mother, almost to the exclusion of the rest of the world, the child is intrusted during this wonderful period.

APPENDIX

CARE OF THE EYES OF THE NEW-BORN

Sometimes the swelling and mattering and soreness of a new baby's eyes are the result of a cold; but again, such symptoms often show the presence of a terribly destructive disease called ophthalmia neonatorum; and not even a physician can tell the one thing from the other. If it is just a cold, the baby will get well with ordinary care. If it is ophthalmia, he will grow worse. The eyes will stick together morning after morning; they will run matter; the baby will wilt and pine and fret; then, all of a sudden, the iris will gush out — and the child will be blind!

There is a widespread belief that this dangerous disease can arise only when the child has been exposed to a certain infection. *But this is not true.* The child of a sound and healthy father and mother may have it, if exposed to the common accidents of birth.

The safe thing to do — and progressive physicians do it — is to place a single drop of a weak solution of nitrate of silver — two per cent — into the eye as soon as the baby is born. If this is done, there is seldom any further trouble. This is the routine practice in all good hospitals.

But if this precaution has been omitted and the baby's eyes begin to be sore, waste no time, but take active measures at once. First, wash the eyes, several times a day if necessary. Do not allow the pus to accumulate. As the washing is troublesome to the child, he will struggle to get away from it. To prevent this, lay him on a long towel or shawl, and bind this firmly around him, so that he cannot move. Then take soft, clean old rags — pieces of old linen handkerchiefs are just right — and wash the eyes very gently with tepid water, or, better yet, with tepid milk and water. Be sure that the milk, the water, the rags, and your own hands are all scrupulously clean! Dirt is clear poison in such a case.

Having washed the eyes, brush the edges of the lids with a little plain vaseline or thick, sweet cream, to keep the lids from sticking together. Be sure always to do this just before putting the baby to sleep, so that his eyes will not be stuck together when he wakes up.

Throw away every rag you use, immediately after using it. It is best to burn it. Scald out the basin, and wash your hands with care, for this is a very infectious disease. The least particle of matter on your fingers or a towel will be enough to give you or some one else the same trouble.

So much for cleanliness. The remedial treatment consists in the use of a solution of alum — six grains to one ounce of distilled water. Have your druggist prepare it for you, and, after washing the eyes as just directed, place one drop between the lids with a dropper. This can be had for five cents at the drug store. Do not let the dropper itself touch the eyes or touch any of the cloths you have been

using, or, at the next treatment, you will be putting more poison into the poor, sick little eyes.

These measures are usually sufficient. If they are not, and the disease seems to be gaining, get a two per cent solution of nitrate of silver and drop *just one drop* into each eye. Lay a folded handkerchief wet with cold water upon the eyes, to relieve the burning that follows the use of this remedy. The nitrate of silver reënforces the action of the alum water. One application is usually sufficient. After that you may return to the alum water again.

There is absolutely no danger in this treatment, if you adhere strictly to the above rules; and you may save your child from a lifelong, terrible affliction.

If you find that your baby has sore eyes, you need not leap at once to the conclusion that it is going to be blind. Fear is a bad thing. It paralyzes all your efforts. Fear is not necessary; for if you take the right course, there is nothing to fear. Terrible as this dis-

ease is, it is *preventable;* and, in its earlier stages, curable.

Perhaps the trouble is only a cold, as your well-meaning friends will tell you; but perhaps it is more. The wise thing is to be on the safe side.

It won't hurt to treat a cold as if it were ophthalmia. Alum water and cleanliness can hurt no baby. But it will hurt to treat ophthalmia as if it were a cold.

INDEX

Affection
  baby's need of it, 87.
Ambidexterity
  arguments for and against, 66.
Anger
  causes of, 193.
Arms
  holding out, at 3 months, 84.
Attention
  too much, 154.

Baby basket, 3.
Baby talk, 190.
Backwardness, 72.
Balls
  Froebel's first gift, 127.
Barley water, 50.
Bath
  first bath, 9.
  oil, 9.
  temperature of, 148.
  toys for, 129.
Birth
  changes inaugurated by, 8.
  condition at, 12.
Blindness
  at birth, 13.
Bottle
  care of, 120.
  foods for, 48.
Bottle-babies, 42.
Bowels
  regulation of — by food, 50.
Bowlegs
  at birth, 12.
  too early use of legs, 227.
Brain centers
  at birth, 12.
  built by the exercise of will, 208.
Breasts
  stripping of, 26.

Causality, 201.
Chafing, 123.
Changing diapers, 7.
Climbing, 169.
Clothes
  bed-clothes, 18.
  first clothes, 11.
  for creeping, 171, 176.
  Gertrude Suit, 28.
  out-door wraps, 5.
  short clothes, 31.
Colic
  from wet diapers, 7.
Contacts
  should be multiplied, 64.
Control of bowels and bladder, 205.
Cradle
  cold, 17.
  flat, 16.
Creative activity, 103.
Creeping
  clothes for, 171, 176.
  importance of, 166.
  inconvenience of, 165.
Cries
  articulate, 187.
  of discomfort, 54.
  of hunger, 54.
  of new-born, 14.
  of pain, 54.
  significance of, 53.
Cross-eyes, 56.
Crowing, 116.

Deafness
  at birth, 13.
  importance of early recognition, 39.
Development
  order of (see Progress of the Month).

Diapers
changing, 7.
number of, 6.
Discipline, 89.
Discomfort
after birth, 16.
causes of, 34.
signs of, 36, 73.
Discontent
causes of, 75.
Distance
sense of, 108.
Draughts, 153.
Dressing the baby
first time, 11.

Ear
condition at birth, 13.
Emotions
child's expression of, 131.
mother's — effect of, on child, 137.
Eyes
care of, at birth, 249.
condition of, at birth, 13.
fixation of, 79.
motions of, 55, 56.

Falling objects, 199.
Fear, 181.
as an obstacle to walking, 224.
toward strangers, 133.
Feelings
unpleasant, 16.
Fire
teaching fear of, 66.
Food
artificial, 51.
amount of, 71, 81.
for nursing mother, 45, 46.
for weanling, 215.
testing suitability, 52.
times of giving at 1 month, 25.
times of giving at 3 months, 76.
unaccustomed, 121.

Fresh air
effect on mother's milk, 46.
Fruits and vegetables, 218.

Gesture
first language, 184.
limitation of, 185.
Grasping
at 3 months, 69.
at 4 months, 97.
immediately after birth, 14.

Hair-pulling, 105.
Hammock
or cradle, 18.
out of doors in summer, 119.
Hand
relation to brain, 60, 61, 63.
Head
holding it up, 80, 95.
raising it, 57.
shape of, at birth, 13.
Hearing
at birth, 38.
at 2 months, 56.
Hiccough, 76.
Hunger
signs of, 54.

"I" feeling
consciousness of self, 82.
Imitation, 96.
Imitative sounds, 188.
Individuality
a struggle for, 155.
Inhibition
impossible at 3 months, 65.
Insensitive areas, 35.
Interests (outside), 106.
Interruption
of the baby's play, 157.

Kiss
baby learns to, 160.

Laughter
at 1 month, 37.
true, 160.
Layette, 4.
Learning to speak, 190.

Massage, 115.
Memory, 146.
Milk
aniseed tea, 47.
care of baby's milk, 120.
chemical imitation of mother's milk, 44.
modified, for babies, 51.
mother's, how to increase flow, 45.
Motion
expressive, 179.
reflex, 205.
voluntary, at 3 months, 77.
Mouth
as a general receptacle and sense organ, 109.
Movements of the eyes
at 1 month, 37.
at 2 months, 56.
at 3 months, 79.
Muscles
activity of, 115.

Napkins, 6.
Nausea, 75.
Navel
dressing, 11.
silk for tying, 4.
Negative commands, 65.
New-born baby, 1.
Night air, 151.
Night care, 7.
Nipples
artificial, 110.
Noises
interest in, 106.
sensitive to, 178.
Nose
at birth, 12.
later, 144.
Nursing
complete, 26.
frequency of, 25.
night, 27, 46.

Oatmeal water, 50.
Obedience
impossibility of, 65.
Oil rub
after birth, 9.
Outfit
see Layette.
Outside interests, 106.

Pain
cry of, 54, 148.
Playing with the baby, 91.
Playthings, 124, 126.
Pleasure
signs of, 36.
Precocity, 191, 205.
Prenatal impressions, 136.
Preparation for the baby's advent, 2.
Prickly heat, 123.
Progress of the Month
1 month old, 33.
2 months old, 53.
3 months old, 71.
4 months old, 92.
5 months old, 116.
6 months old, 130.
7 months old, 143.
8 months old, 158.
9 months old, 177.
10 months old, 199.
1 year old, 230.
Punishment
for anger, 196.
Putting baby to sleep, 20.

Records
value of average, 72.
Rocking to sleep, 19.

Satisfaction
signs of, 73.
Scratching, 104.
Screens, 152.
Self-control, 204.
Sensations
unpleasant, 16.
Sensitiveness
to temperature, 148.
Shoes
for creeping, 174.
Sighs, 145.
Sight
at 2 months, 55.
Singing to sleep, 20.
Sitting up
against pillow at 3 months old, 79.
device to help baby sit up alone, 94.
in bath, 206.
on mother's lap, 94.
Skull
condition at birth, 13.
Sleep
at 2 months, 58.
at 3 months, 76.
at 4 months, 99.
at 5 months, 117.
at 6 months, 134.
Smell
sense of, 39.
Smiles, 53.
Soothers
see Artificial Nipples.
Sounds
imitative, 188.
Spatting hands, 65, 196.
Speech
development of —
at 3 months, 83.
at 4 months, 98.
at 6 months, 134.
at 7 months, 147.
at 8 months, 162.
at 9 months, 180.
at 10 months, 187, 207.
at 1 year, 230.
flexibility of speech organs, 233.
Squint, 37, 56.
Standing alone, 183.
Sterilizing
bottles and nipples, 121.
Strangers
astonishment at, 133.
fear of, 133.
Sucking fist, 59.
Suffocation
helpless against, at 3 months, 78.
Suggestibility
greatest at waking and going to sleep, 21.
Swinging cradle or hammock, 19.

Tantrums, 194.
Tearing paper, 103, 204.
Tears, 53.
Teeth, 209.
the first tooth, 140.
upper front teeth, 183.
Temper
causes of, 192.
cures for, 199.
is it true temper, 192?
Temperature
of bottle, 150.
of cradle, 17.
of first bath, 9.
of room at birth, 8.
Thumb-sucking, 113.
Touch
at 2 months, 55.
importance of, 64.
sense of, 115.

Toys, 124.
for the bath, 129.

Vomiting, 75.

Walking
date of, 226.
learning to, 189, 207, 222.
with the baby, 21.
Warmth
and growth, 18.
first great necessity for newborn, 11.
Water
drink of, for baby, 27.
Weaning, 210.
time of, 220.
Weight
at birth, 12.
1 month old, 40.
2 months old, 58.
3 months old, 81.
4 months old, 100.
5 months old, 117.
6 months old, 134.
9 months old, 183.
10 months old, 209.

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